



Final

Environmental Assessment Construction of a New Fire Station

Wright-Patterson Air Force Base

Contract No. F33601-01-DW002
Delivery Order 5016

Submitted to:

**Wright-Patterson Air Force Base
88th Air Base Wing
Office of Environmental Management**



**Environmental Management
Wright-Patterson AFB**

Prepared by:

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September 2003

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FINAL
FINDING OF NO SIGNIFICANT IMPACT

Name of Action: Construction of a New Fire Station, Wright-Patterson Air Force Base (WPAFB), Ohio

Currently, Fire Department activities in Area C are fragmented into two buildings, which severely degrades response capabilities. A new fire station has been proposed to consolidate functions split between Fire Station 1 (Building 30163) and Fire Station 2 (Building 30206) and to improve crash response time for incidents on the south end of the runway. Consolidation of activities into one building would also reduce manpower requirements, eliminate excessive overtime, and improve quality of life deficiencies (e.g., sleeping areas). The fire station would be located in Area C, at the intersection of Allbrook Drive and Skeel Avenue.

Proposed Action and Alternative:

The proposed action is to construct a new consolidated fire station and conduct the interior demolition/renovation of one building and the partial/complete demolition of four other buildings on the base. The demolition of four buildings is included as part of this action to offset the square footage to be gained from the construction of the new fire station. There were two alternatives analyzed:

Alternative A, the No Action alternative, would have Fire Department activities remain split between Fire Stations 1 and 2. Alternative A also serves as a baseline against which the Proposed Action can be compared.

Alternative B, the Proposed Action, includes the construction of the new consolidated fire station and the interior demolition/renovation of one building (Building 30163) and the partial/complete demolition of four other buildings (Buildings 30206, 30201, 20090, 11405) on the base.

Environmental Consequences:

The impacts associated with demolition actions at the five buildings are tiered from the *Final Environmental Impact Statement for the Demolition of Multiple Historic Facilities at Wright-Patterson Air Force Base, Ohio* (U.S. Air Force, 1997). The environmental consequences of the Proposed Action to construct the new fire station are as follows:

Biological Resources: Under Alternative B, there would be minor, short-term impacts to vegetation during site preparation/excavation, and construction activities at the proposed site and during demolition activities at three of the proposed buildings for demolition. Impacts to vegetation would be minimized because disturbed areas would be re-vegetated and landscaped after project activities.

Water Resources: Under Alternative B, minimal, short-term impacts to surface water would potentially occur due to surface water runoff during construction and demolition activities. Impacts would be minimized because erosion and siltation controls would be implemented.

Soils: Under Alternative B, there would be potential minor impacts (i.e., soil erosion) during construction and demolition activities. Impacts would be minimized because erosion and siltation controls would be implemented.

Cultural Resources: Under Alternative B, there would be no impacts due to construction of the new fire station. Potential impacts would occur, however, during demolition/renovation activities at Building 30163 and demolition activities at Building 30206. Impacts would be minimized through consultation with the BHPO.

Air Quality: Under Alternative B, there would be nominal short-term impacts upon air quality during the construction and demolition activities from particulate matter and engine exhaust emissions. Impacts would be minimized by the use of dust suppression measures.

Noise: Under Alternative B, there would be short-term minor impacts due to heavy equipment used during construction and demolition activities. Increases in noise levels are expected to be intermittent while the proposed action is carried out. There would be potential long-term impacts to occupants of the new fire station due to noise from aircraft along the flightline. Impacts would be minimized because living quarters would be designed to meet requirements for sound level attenuation.

Health and Safety: Under Alternative A, there would be potential impacts due to reduced response times to fires and crashes. Under Alternative B, there would be potential impacts to project workers due to accidents during construction activities. Impacts would be negligible because adherence to health and safety regulations would minimize hazards. Long-term beneficial impacts would occur due to improved operations and response times for fires and crashes. There would be minimal impacts to the facility or personnel due to explosives-related activities on the flightline near the facility. Adherence to AFMAN 91-201 would preclude the handling or processing of explosives within required separation distances. According to AFMAN 91-201 paragraph 3.25, however, Combat Aircraft loaded with Quantity Distance exempt explosive devices can be parked on any parking spot near the proposed fire station.

Because the base fire department must not be considered “related” to any explosion sites, the proposed location would impact the ability of WPAFB to handle and/or generate combat aircraft on the flightline. Alternative B would reduce future mission capability and flexibility regarding fighter aircraft generation and handling because the required separation distances cover large portions of the existing parking ramp.

Socioeconomics: Under Alternative B, there would be nominal, beneficial impact to the local economy during construction. Nominal, beneficial long-term impacts could occur for the base by eliminating the need for overtime hours.

Transportation/Traffic: Under Alternative B, there would be short-term impacts to traffic circulation during project activities. Once activities are completed, a nominal increase in traffic circulation in the vicinity of the new fire station would be expected.

Utilities: Under Alternative B, there would be potential impacts to utility lines during excavation, construction, and demolition activities. Impacts would be minimized because proper clearance procedures would be followed.

Regulatory Requirements:

Under 40 CFR 122.26, permits would be required for discharges into storm sewers and/or for erosion control due to construction activities. A “Permit-to-Install” would be required if significant changes or additions are made to sewer systems or water mains.

Public Notice:

A public notice was posted in the Dayton Daily News on 7 November 2003. The public comment period for the final EA was 7 November 2003 through 7 December 2003. No comments were received.

Finding of No Significant Impact (FONSI):

The proposed action is to construct a new consolidated fire station and conduct the interior demolition of one building and the partial/complete demolition of four other buildings on the base. The No Action Alternative was analyzed where the current Fire Department activities would remain fragmented between two buildings and the new fire station would not be constructed. Based on my review of the facts and analysis contained in the EA, I conclude that Alternative A and B (the Proposed Action) will not have a significant impact either by itself or considering cumulative impacts. Accordingly, the requirements of the National Environmental Policy Act, the Council on Environmental Quality Regulation and 32 CFR 989 have been fulfilled, and an environmental impact statement is not required and will not be prepared.



RONALD J. LESTER, Director
Office of Environmental Management

12-22-03

DATE

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List of Acronyms/Abbreviations

ACM	asbestos-containing material
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFRIMS	Air Force Restoration Information Management System
AICUZ	Air Installation Compatible Use Zone
ANSI	American National Standards Institute
bgs	below ground surface
BHE	BHE Environmental, Inc.
BHPO	Base Historic Preservation Officer
BMP	Basewide Monitoring Program
BUSTR	Bureau of Underground Storage Tank Regulation
CAAA	Clean Air Act Amendments
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CHP	Central Heating Plant
CO	carbon monoxide
CRMP	Cultural Resources Management Plan
CSA	coal storage area
dB	decibel
DoD	U.S. Department of Defense
EA	environmental assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
ERTR	East Ramp Tank Removal
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FICON	Federal Intragency Committee on Noise
ft	feet
FY	Fiscal Year
GLARC	Great Lakes Archaeological Research Center
gpm	gallons per minute
GWOU	Groundwater Operable Unit
ICI	International Consultants Incorporated
IRP	Installation Restoration Program
IT	IT Corporation
LBP	lead-based paint
LF	Landfill
LTM	Long-term Monitoring Program
MCD	Miami Conservancy District
MCL	Maximum Contaminant Level

List of Acronyms/Abbreviations (continued)

mg/kg	milligram/kilogram
µg/L	micrograms/liter
MSA	Metropolitan Statistical Area
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NOI	Notice of Intent
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Registry of Historic Places
O ₃	ozone
OAC	Ohio Administrative Code
ODNR	Ohio Department of Natural Resources
OEPA	Ohio Environmental Protection Agency
ORC	Ohio Revised Code
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PCE	tetrachloroethene
PM	Particulate Matter
PM ₁₀	Particulate Matter (less than 10 microns in diameter)
PM _{2.5}	Particulate Matter (less than 2.5 microns in diameter)
RAPCA	Regional Air Pollution Control Agency
RI	Remedial Investigation
ROD	Record of Decision
SAIC	Science Applications International Corporation
SCS	Soil Conservation Service
sf	square feet
SO ₂	sulfur dioxide
SP4	Spill Site 4
TCE	trichloroethene
TF	Tank Farm
TPH	total petroleum hydrocarbons
tpy	tons per year
TSS	Total Suspended Solids
USACERL	U.S. Army Construction Engineering Research Laboratory
USAF	U.S. Air Force
USACOE	U.S. Army Corps of Engineers
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

List of Acronyms/Abbreviations (continued)

USGS	U.S. Geological Survey
UST	underground storage tank
VOC	volatile organic compound
WPAFB	Wright-Patterson Air Force Base

1.0 Purpose and Need for Action

This environmental assessment (EA) presents the proposed action of constructing a new fire station in Area C at Wright-Patterson Air Force Base (WPAFB), Ohio. This EA has been performed in accordance with the National Environmental Policy Act (NEPA) of 1969, 40 Code of Federal Regulations (CFR), Part 1500, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and the U.S. Air Force (USAF) Environmental Impact Analysis Process (EIAP) [Air Force Instruction (AFI) 32-7061]. The purpose of the proposed action is to construct a new facility to consolidate functions split between Fire Stations 1 and 2 and to improve crash response time for incidents on the south end of the runway. Consolidation of activities into one building would also reduce manpower requirements, eliminate excessive overtime, and improve quality of life deficiencies (e.g., sleeping areas) for Fire Department personnel.

1.1 Project Description

WPAFB is located in the southwest portion of Ohio in Greene and Montgomery counties, 10 miles east of the City of Dayton (Figure 1.1-1). The base encompasses 8,145 acres and is classified as non-industrial with mixed development. WPAFB is subdivided into three areas: A, B, and C. The installation was formed as a consolidation of two bases: Wright Field (Area B) and Patterson Field (Areas A and C). Area B is separated from Areas A and C by State Route 444 and is more developed than the other areas of the Base. Area A contains the majority of administrative functions, Area B focuses on research and development activities, and Area C consists of airfield operations (ICI/SAIC, 1995; WPAFB, 1994a; Woolpert, 2001).

Currently, Fire Department activities in Area C are fragmented between two buildings: Building 30163 (Fire Station 1), which is responsible for response to structural fires in Areas A and C, and Building 30206 (Fire Station 2), which is responsible for fires on the flightline and supports over 121,000 annual aircraft operations (WPAFB, 2003c). The fragmentation of activities raises a number of concerns including the following:

- *Inefficient fire response and crash recovery* – Currently, structural fire response and crash recovery are split between Fire Stations 1 and 2. From Fire Station 2, the Fire Department cannot meet the required crash response time for incidents on the south end of the runway. There are additional problems with response times because some of the crew members for crash response are housed at Fire Station 1 (WPAFB, 2003i).

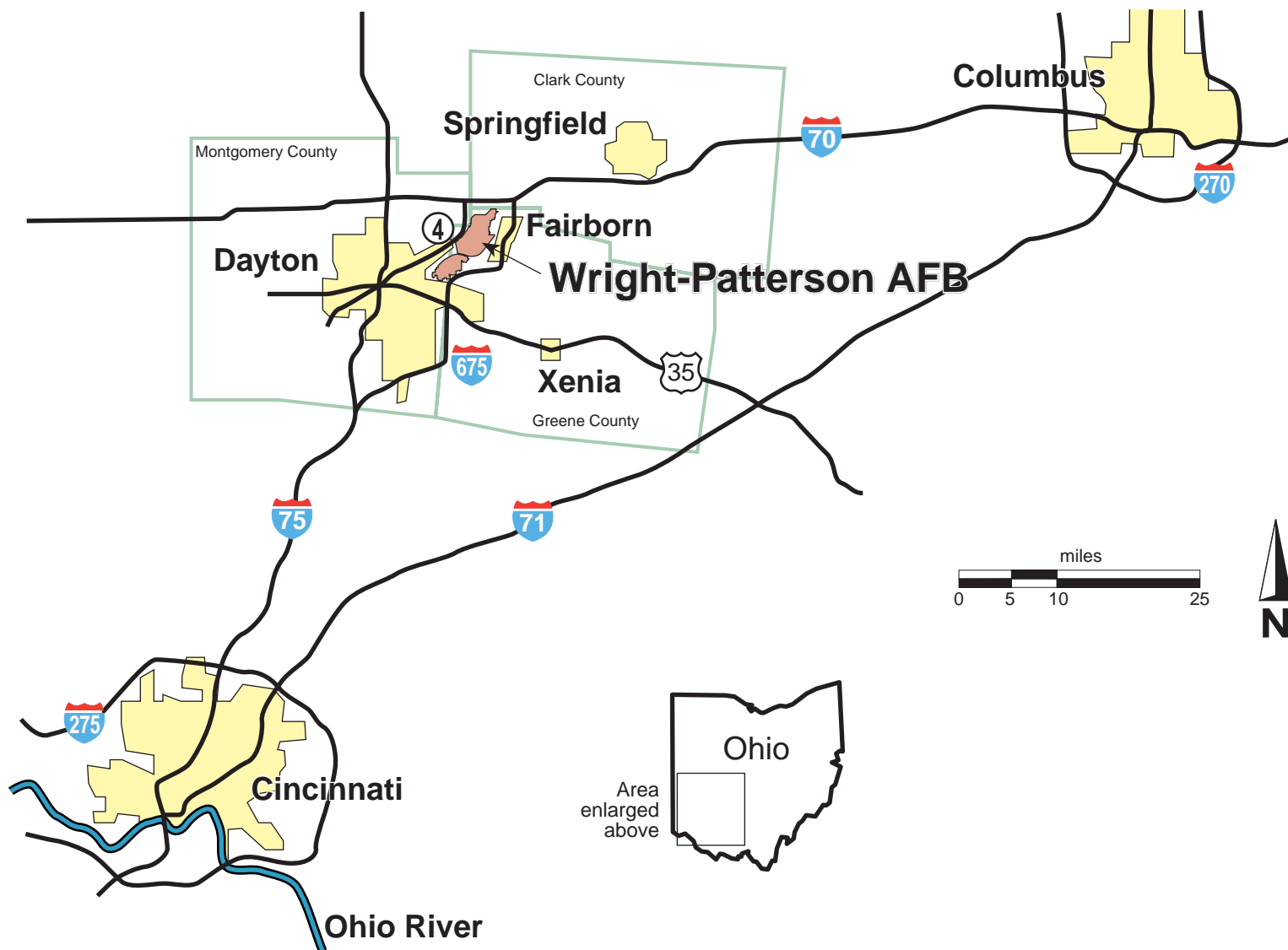


Figure 1.1-1 Area Location Map.

Source: ES, 1982

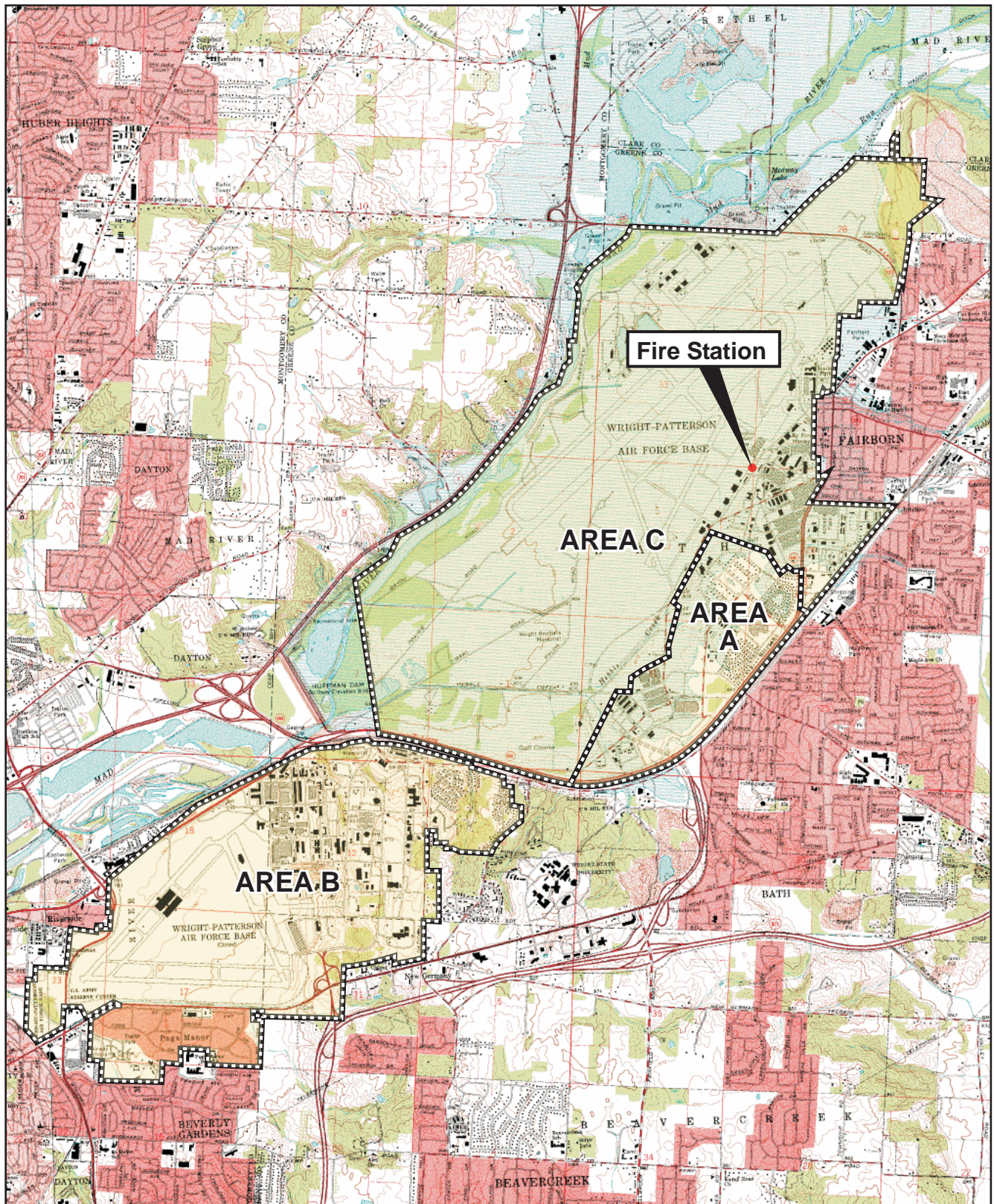
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- *Space deficiencies* – Between Fire Stations 1 and 2, there is no training or classroom space, no secure medical storage area, no general supply storage area, and no room for Reservists to store their fighting gear. Currently, the Fire Station 1 garage doors cannot accommodate the new, larger vehicles such as the P-24. Other vehicles (i.e., P-21 and P-22) have only a few inches of clearance space. Because Station 1 is a historic building, the doors cannot be enlarged.
- *There are “Quality of Life” deficiencies at the current facilities* – Currently, there are no on-site laundry capabilities and personnel must travel to other areas of the base to accomplish these activities. Both Fire Station 1 and Fire Station 2 have substandard sleeping, dining, and day room areas. In addition, ventilation systems at both stations are inadequate and allow diesel fumes into administrative and living areas.

To eliminate these concerns, a new consolidated fire station would be constructed (WPAFB, 2003a). The proposed location of the new fire station is in Area C at the northwest corner of Allbrook Drive and Skeel Avenue, adjacent to flightline Gate 3F (Figures 1.1-2 and 1.1-3). The new fire station would improve crash response time for incidents on the south end of the runway and would be properly sized to adequately house larger vehicles, training and classroom areas, storage areas, sleeping and dining areas, and day room areas. In addition, the consolidation of the fire stations would allow for “cross-staffing” various response vehicles, resulting in reduced manpower requirements and the elimination of excessive overtime. A detailed description of the proposed fire station is included in Section 2.4.2.

1.2 Decisions Needed

The purpose of this EA is to analyze the proposed action and its alternative (No Action) and determine whether the proposed action (i.e., construction of a new fire station) is expected to have significant impacts on human health, safety, or the environment. The impacts to be considered include those resulting from all phases of the construction activities: site preparation, building construction, landscaping, and operation of the new facility. Impacts will also be considered for the interior demolition of one building and the partial/complete demolition of three other buildings on the base. The EA will support the interrelated decisions concerning the construction of the new fire station and provide the decision maker and the public with information required to understand the short-term and long-term consequences of the proposed action and its alternative. Where applicable, mitigation measures will be recommended to minimize adverse impacts. The necessity for the preparation of an Environmental Impact Statement (EIS) will also be determined.



Fire Station

AREA C

AREA A

AREA B

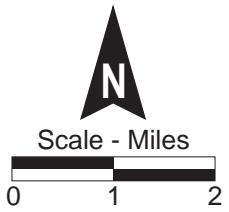
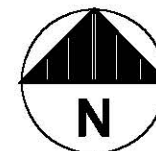
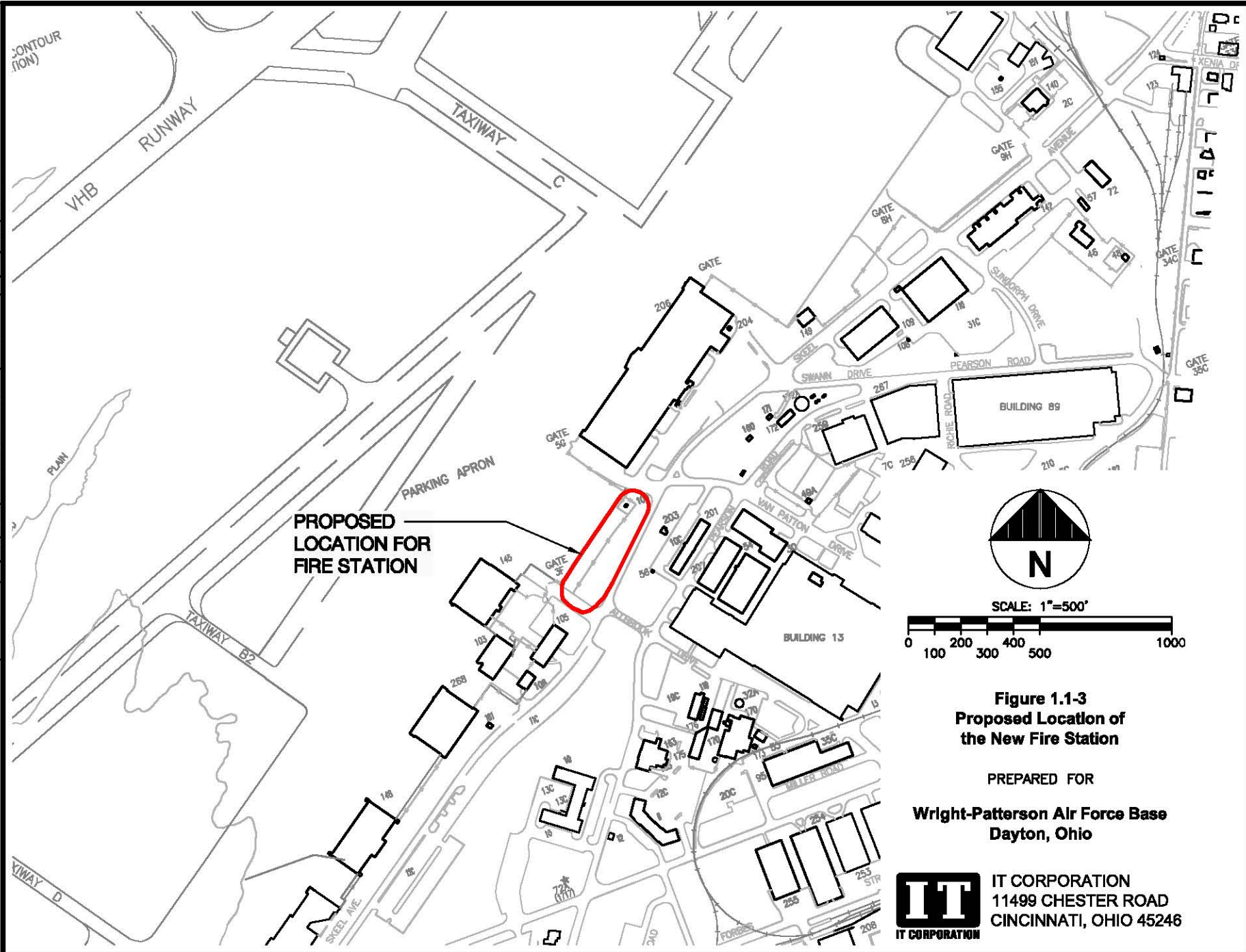


Figure 1.1-2.
Proposed Location
of the New Fire Station.
(Topographic Map)
Wright-Patterson Air Force Base
Dayton, Ohio

DRAWING NO.	K-843987-3000-4/03-W	
	4/17/03	4/17/03
CHECKED BY	CH	CH
APPROVED BY		
DRAWING BY	KMS	4/15/03

DRAWN BY	MSN	CHECKED BY	TC	5/30/03	DRAWING	2003 28-04.DWG
	5/30/03	APPROVED BY	CH	5/30/03	NUMBER	



SCALE: 1"=500'

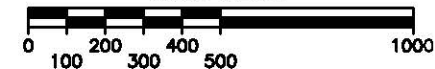


Figure 1.1-3
Proposed Location of
the New Fire Station

PREPARED FOR

Wright-Patterson Air Force Base
Dayton, Ohio



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1.3 Scope of Environmental Analysis

The EA will analyze impacts associated with the construction of the new fire station. Although this document will address all environmental issues specified under NEPA, the primary issues of concern associated with the proposed construction of the fire station include:

- Geology and soil
- Health and safety
- Air quality
- Noise
- Transportation/traffic
- Installation Restoration Program (IRP) sites

Other issues to be addressed, to a lesser degree, include:

- Natural resources
- Water
- Land use
- Cultural/historic resources
- Socioeconomics

1.4 Regulatory Requirements

Statutes and regulations to which the Air Force must comply are summarized in Table 1.4-1.

Criteria/scope for fire stations are outlined in Air Force Handbook 32-1084, *Facility Requirements*. This handbook provides criteria used for assigning occupancy of existing facilities and in programming space allowance for new facilities. The *Air Force Fire Station Design Guide* (USAF, 1997a) provides the criteria to evaluate, plan, program, and design standardized Air Force fire station facilities.

Permits issued by the Ohio Environmental Protection Agency (OEPA) may be required to cover actions that could potentially affect sewer systems at the base. For example, significant changes or additions to the sanitary sewer systems or installation/ relocation of water mains as a result of building construction may require a "Permit to Install." Furthermore, permits may be required for discharges into storm sewers and/or for erosion control. Under the Phase II rule of Storm Water Discharge regulations (40 CFR 122.26), a permit would be required for a construction site involving land disturbance of one to five acres of land. The Phase II rule became effective on 10 March 2003. At the time this EA was prepared, the design of the new fire station was not yet final. Depending upon the configuration of the building (one story versus two stories), the area

of the footprint of the building was estimated to range from 28,000 square feet (sf) to 35,725 sf. The areas of both designs are between one to five acres.

An air permit would not be required for the construction and operation of the new facility as it meets the “*de minimis*” air contaminant source exemption. The exemption is addressed under Ohio Administrative Code (OAC) 3745-15-06.

Table 1.4-1
Summary of Applicable Regulations
for the Proposed Action and Alternative
Page 1 of 2

Fire Stations

- Air Force Handbook 32-1084, Facility Requirements
- US Air Force Fire Station Design Guide, 1997

Natural Resources

- AFI 32-7064, Integrated Natural Resource Management Plan
- Endangered Species Act of 1973, 16 USC §1531 et seq.
50 CFR Part 200
50 CFR Part 402
33 CFR Parts 320-330
- Executive Order 11990 – Protection of Wetlands
- 40 CFR, Part 6, Appendix A – Protection of Floodplains
- 40 CFR, Part 6, Appendix A – Protection of Wetlands
40 CFR, Part 230 – Protection of Wetlands
40 CFR, Parts 320-330 – Protection of Wetlands
- Clean Water Act, Section 404
- Ohio Revised Code (ORC) 1531.25, Protection of Species Threatened with State-Wide Extinction

Land Use

- AFI 32-7063, Air Installation Compatible Use Zone (AICUZ) Program

Cultural/Historic Resources

- AFI 32-7065, Cultural Resources Management
- National Historic Preservation Act of 1966, as amended
- 36 CFR Part 800 – Protection of Historic and Cultural Properties

Air Quality

- National Ambient Air Quality Standards (NAAQS) – 40 CFR §81.34 and §81.336
- Ohio Administration Code (OAC) 3745-17 Particulate Matter Standards
- OAC 3745-25 Emergency Episode Standards
- OAC 3745-15-06 *de minimis* air contaminant source exemption

Noise

- 29 CFR 1910.95 Occupational Noise Exposure

Table 1.4-1
Summary of Applicable Regulations
for the Proposed Action and Alternatives
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Health and Safety

- 29 CFR 1910.133 Eye and Face Protection
- 29 CFR 1910.1025 Occupational Safety and Health Standards: Lead
- 29 CFR 1910.1200 Hazard Communication
- 29 CFR 1910.34 Respiratory Protection
- 29 CFR 1910.135 Occupational Head Protection
- 29 CFR 1910.136 Occupational Foot Protection
- Subpart Z Toxic and Hazardous Substances
- Occupational Safety and Health Act of 1970, revised 1978
- 29 CFR 1926 Safety and Health Regulations for Construction
- 29 CFR 1926.62 Occupational Health and Environmental Controls: Lead
- Air Force Manual (AFMAN) 91-201, Explosive Safety Standards

Lead-Based Paint

- 40 CFR Parts 240 – 280

Wastewater/Stormwater

- 40 CFR Part 122.26 Storm Water Discharges
- OAC 3745-31 Permit to Install New Source of Pollution
- OAC 3745-33 Ohio National Pollutant Discharge Elimination System (NPDES) Permit
- OAC 3745-38 Notice of Intent (NOI)
- City of Dayton Sewer Use Ordinance (September 21, 1994)

2.0 Alternatives Including the Proposed Action

2.1 Introduction

This chapter describes the Air Force's proposed construction of a new consolidated fire station in Area C at WPAFB and the interior demolition of one building and the partial/complete demolition of three other buildings on the base. The following sections also describe a reasonable alternative to the proposed action.

The proposed action and alternative are as follows:

- Alternative A – No action
- Alternative B – Construction of a New Fire Station (Proposed Action)

Section 2.2 describes the formulation of Alternatives; Section 2.3 describes the Alternatives eliminated from detailed study; Section 2.4 describes the proposed action and the Alternative considered (No Action Alternative); and Section 2.5 provides a comparison of the Alternatives.

2.2 Process Used to Formulate Alternatives

As part of the NEPA process, the Air Force must analyze reasonable alternatives to the proposed action and the "no action" alternative, as fully as the proposed action. "Reasonable" alternatives are defined under 32 CFR Part 989.8 as "...alternatives that meet the underlying purpose and need for the proposed action and that would cause a reasonable person to inquire further before choosing a particular course of action." Reasonable alternatives to the proposed action are described below.

The proposed action, Alternative B, was formulated on the basis for the need to consolidate Fire Department activities that are currently fragmented in a number of buildings and improve crash response time for incidents on the south end of the runway. Additional considerations for this action are related to providing adequate space for Fire Department activities, reducing manpower requirements, eliminating excessive overtime, and improving quality of life deficiencies (e.g., sleeping and dining areas) for Fire Department personnel.

The No Action alternative, Alternative A, was formulated as the antithesis to constructing a new fire station; that is, a new fire station would not be built. Fire Stations 1 and 2 would continue to be used for Fire Department activities in Area C. In essence, the no action alternative serves as a

“baseline” from which to measure potential impacts resulting from the implementation of the proposed action.

2.3 Alternatives Eliminated From Further Study

The alternatives listed above were designated by the Air Force as reasonable alternatives to be considered for evaluation. No other alternatives (i.e., actions or locations) were considered.

2.4 Descriptions of Alternatives Considered

The proposed action and alternative to the proposed action, the No Action alternative, are described below.

2.4.1 Alternative A: No Action

Under the No Action alternative, it is assumed that Fire Stations 1 and 2 would continue to be used for Fire Department activities in Area C. No alterations or improvements would be made to these buildings. This alternative will serve as a baseline against which the Proposed Action can be compared.

2.4.2 Alternative B: Construction of a New Fire Station (Proposed Action)

The proposed fire station would be a one- to two-story structure of approximately 2,600 to 3,320 square meters (28,000 to 35,725 sf) located at the northwest corner of Allbrook Drive and Skeel Avenue (WPAFB, 2003a) as shown in Figures 1.1-3 and 2.4-1. [The final design of the fire station and associated parking lot was not complete when this EA was prepared. Therefore, the exact footprint and location of the building and parking lot within the designated area could not be identified on Figure 1.1-3.] The structures would consist of a reinforced concrete foundation and floor slab, masonry walls and roof. The facility would include an apparatus room with 14 stalls, a communications room, classrooms, administrative offices, sleeping quarters, a dining area, a recreation area, support areas, and parking for 50 cars and additional space for fire trucks. Parking would encompass a portion of the current concrete apron/ramp, plus approximately 20,000 sf of lawn area for new parking lot construction. Because the consolidated fire station would house a large percentage of the total response capacity, this new station would be considered a “base fire department” rather than a “flightline fire station” (as defined in AFMAN 91-201, paragraph 3.13.6.11).

Site preparation activities associated with the proposed action would begin with stripping the topsoil, followed by excavation and compaction of the soil. The site would be graded so that



View of the proposed location looking northwest toward the parking apron.



View of the proposed location looking north-northeast.

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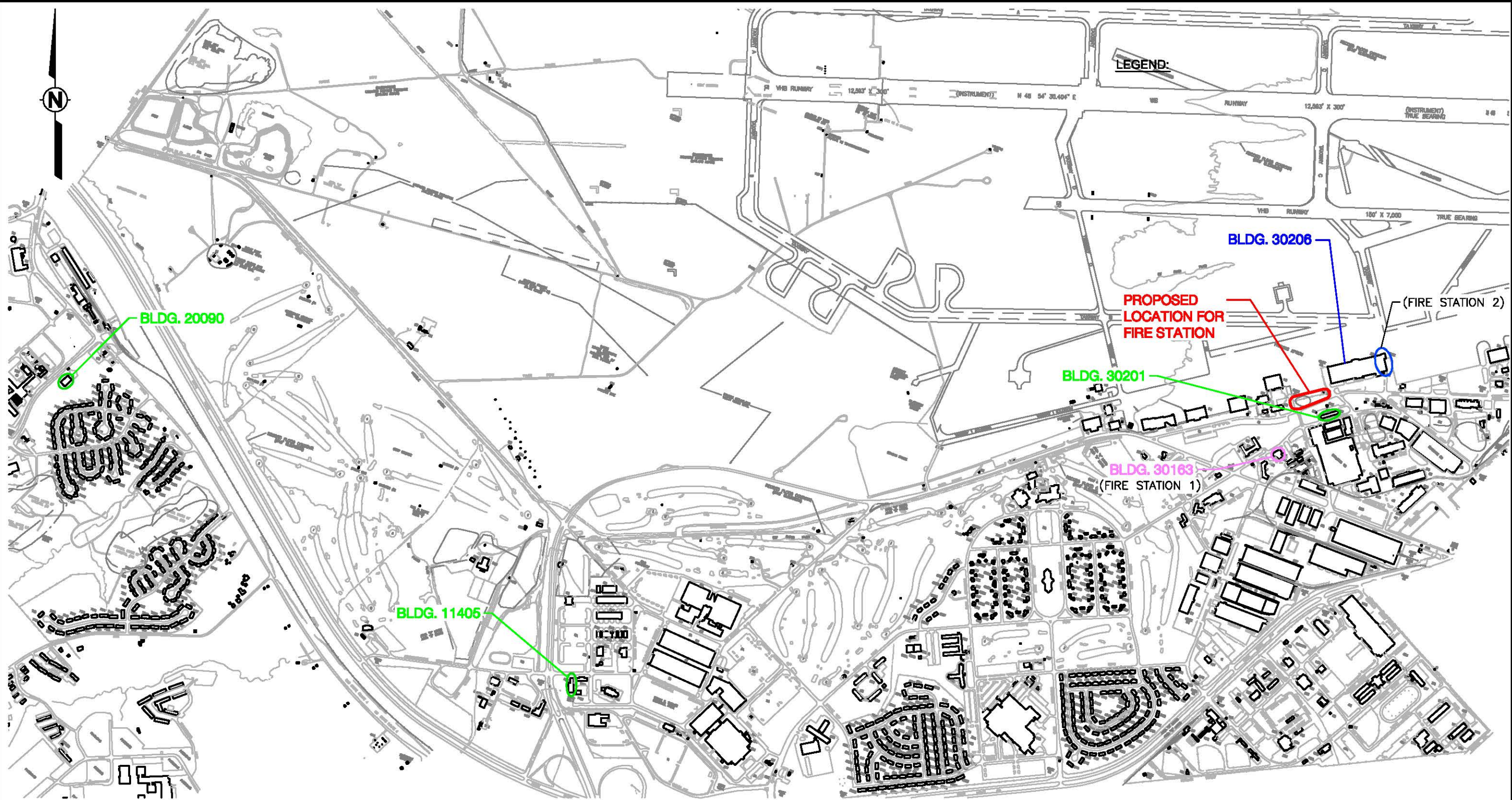
storm water runoff would flow to existing drainage. Site work would include mechanical and electrical utilities located both above and below ground. Once construction is completed, the site would be landscaped. If necessary, the fence enclosing the flightline would be relocated to accommodate the new facility. A temporary fence would be put in place during construction activities. Once construction was completed, a permanent fence would be built.

After Fire Department activities have been transferred to the new Fire Station, the interior space of Building 30163 (Fire Station 1) would be demolished and renovated for other uses (e.g., administrative/office space). Some interior space may need to be retained in Building 30163 due to historic significance. The portion of Building 30206 (Fire Station 2) currently used for Fire Department activities (i.e., the vehicle bay area) would be demolished. This section was not an original part of the building but was an “add-on” for use by the Fire Department.

In an effort to maintain building square footage of buildings across the base at its current level, three additional buildings on base would be demolished (USAF, 1997b). These buildings include: Building 30201 (an administrative/office facility) in Area C, Building 20090 (an open-air picnic shelter) in Area B in the Woodland Hills area, and Building 11405 (a communications maintenance facility) in Area A near Gate 15A. These buildings are not related to current Fire Department operations. [As discussed in Section 4.0, impacts from the demolition will be tiered from the *Final Environmental Impact Statement of Multiple Historic Facilities at Wright-Patterson Air Force Base, Ohio* (USAF, 1997b).] A total of 2,854 square meters of space would be demolished. The locations of these buildings are depicted on Figure 2.4-2 and photographs of these building are provided in Figures 2.4-3a through 2.4-3c.

2.5 Comparison of Alternatives

The impacts associated with the proposed action and the No Action Alternative are summarized in Table 2.5-1. The information includes a concise definition of the issues addressed under each alternative and the environmental impacts associated with each alternative. The analysis is based on information discussed in detail in Chapter 4.0, Environmental Consequences.



LEGEND:

**PROPOSED
LOCATION FOR
FIRE STATION**

BLDG. 30206

(FIRE STATION 2)

BLDG. 30201

BLDG. 30163
(FIRE STATION 1)

BLDG. 11405

BLDG. 20090

LEGEND:

- BUILDINGS PROPOSED FOR INTERIOR DEMOLITION
- BUILDING PROPOSED FOR PARTIAL DEMOLITION
- BUILDINGS PROPOSED FOR COMPLETE DEMOLITION
- PROPOSED LOCATION FOR FIRE STATION

SCALE: 1"=1,200'



**Figure 2.4-2
Buildings Proposed for Demolition**

PREPARED FOR

**Wright-Patterson Air Force Base
Dayton, Ohio**



IT CORPORATION
11499 CHESTER ROAD
CINCINNATI, OHIO 45246



Building 30163 (Fire Station 1) - Interior demolition only and conversion to other uses.



Building 30206 (Fire Station 2) - Demolition of vehicle bay only.
This portion was an add-on to the original building.

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Building 30201 (Administration/Office Facility) - Complete demolition of this building is proposed.



Building 20090 (Picnic Shelter) - The complete demolition of this building is proposed.

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Building 11405 (Communications Maintenance Facility) - The complete demolition of this building is proposed.

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Table 2.5-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative
Page 1 of 3

Resources	Alternative A: No Action	Alternative B: Construction of a New Fire Station
Biological Resources		
Vegetation	Short-Term: No impact. Long-Term: No impact.	Short-Term: Minor impacts during site preparation/excavation and demolition activities. Long-Term: Nominal impact from loss of vegetation on construction and demolition sites; vegetation is common throughout base and site would be re-vegetated and landscaped.
Wildlife	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Threatened and Endangered Species	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Water Resources		
Groundwater	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Surface Water	Short-Term: No impact. Long-Term: No impact.	Short-Term: Potential minor impacts during site preparation, excavation, construction, and demolition activities. Impacts would be minimized because erosion and siltation controls would be implemented. Long-Term: No impact.
Floodplain	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Wetlands	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
IRP Sites	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Portions of the new fire station may be constructed over an IRP site. The site does not pose a significant threat to human health or the environment. No impact would be expected. Long-Term: No impact.
Land Use	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Geology and Soil	Short-Term: No impact. Long-Term: No impact.	Short-Term: Potential minor impacts during site preparation, excavation, construction, and demolition activities (i.e., soil erosion). Impacts would be minimized because erosion and siltation controls would be implemented. Long-Term: No impact.

Table 2.5-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative
Page 2 of 3

Resources	Alternative A: No Action	Alternative B: Construction of a New Fire Station
Cultural/Historic Resources	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact due to construction of new fire station. Potential impacts during renovation/demolition activities at Building 30163 and 30206. Impacts would be minimized through consultation with the BHPO. Long-Term: No impact.
Air Quality	Short-Term: No impact. Long-Term: No impact.	Short-Term: Minor, short-term impact from particulate matter and engine exhaust emissions generated during site preparation, excavation, construction, and demolition activities. Long-Term: No impact.
Noise	Short-Term: No impact. Long-Term: No impact.	Short-Term: Minor impacts on ambient noise from site preparation, excavation, construction, and demolition activities. Impacts would be minor because these activities would be carried out during normal working hours. Long-Term: Minimal impact. The fire station would be designed to meet applicable sound level attenuation requirements.
Health and Safety	Short-Term: Potential impacts due to reduced response to fire and crashes. "Quality of Life" deficiencies would persist. Long-Term: Potential impacts due to reduced response to fire and crashes. "Quality of Life" deficiencies would persist.	Short-Term: Potential impacts to project workers due to accidents during construction activities. Impacts would be negligible because adherence to health and safety regulations and plans would minimize hazards. Potential impacts to nearby workers would be negligible because access to construction/demolition areas would be prohibited and potential hazards to affected utilities would be minimized. Long-Term: Beneficial impact due to improved operations and response times for fires and crashes. Minimal impacts to the facility or personnel due to explosives-related activities on the flightline near the facility. Adherence to AFMAN 91-201 would preclude the handling or processing of explosives within required separation distances. According to AFMAN 91-201 paragraph 3.25, however, Combat Aircraft loaded with Quantity Distance exempt explosive devices can be parked on any parking spot near the proposed fire station.
Socioeconomics	Short-Term: No impact. Long-Term: No impact.	Short-Term: Nominal, beneficial impact on local economy from revenue generated by action. Long-Term: Nominal, beneficial impact to base by eliminating the need for overtime hours.
Transportation/Traffic	Short-Term: No impact. Long-Term: No impact.	Short-Term: Nominal, intermittent impacts from construction and demolition traffic. Long-Term: Nominal increase in traffic in proposed construction location (Skeel Avenue).

Table 2.5-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative
Page 3 of 3

Resources	Alternative A: No Action	Alternative B: Construction of a New Fire Station
Utilities	Short-Term: No impact.	Short-Term: Potential impacts to utility lines during excavation, construction, and demolition activities. Impacts would be minimized by implementing proper clearance procedures.
	Long-Term: No impact.	Long-Term: No Impact.

3.0 Affected Environment

3.1 Introduction

This chapter describes the environment of the area at the northern corner of Allbrook Drive and Skeel Avenue, the area near Gate 15A, and an area in Woodland Hills that would be potentially affected by the proposed action and alternative. This chapter also provides the background information and a basis for the analysis of environmental impact in Chapter 4.0. Where applicable, information from the *Final Environmental Impact Statement for Demolition of Multiple Historic Facilities at Wright-Patterson Air Force Base* (USAF, 1997b) is referenced.

3.2 Biological Resources

3.2.1 Vegetation

The proposed location for the construction of the new fire station is in an area designated by the base as “enhanced improved maintained” grounds, which include portions of improved maintained grounds (e.g., lawns and landscaped areas) designated to receive additional attention and more intensive maintenance. Vegetation in this area consists primarily of grasses, with few weeds (Figure 2.4-1). Dominant species include tall fescue (*Festuca arundinacea*), Kentucky bluegrass (*Poa pratensis*), dandelion (*Taraxacum officinale*), and clover (*Trifolium pratense* and *T. repens*). Enhanced improved grounds are routinely maintained so that grass heights are between 2.5 and 3.5 inches (WPAFB, 2001a). Trees in the proposed construction area are limited to two planted tree rows consisting of large hardwoods, including shagbark hickory (*Carya ovata*), and young ornamental trees present along the fence line.

At Buildings 30201, 11405, and 20090, vegetation consists primarily of grasses and weeds (Figures 2.4-3b and 2.4-3c). Some ornamental and ordinary trees are also present. Building 30201 is in an area designated as “enhanced improved maintained” grounds, while Buildings 11405 and 20090 are in areas designated as “improved maintained” grounds (WPAFB, 2001a). A large wooded area is located behind Building 20090. Building 30206 is located on the flightline; there is minimal vegetation present in this area.

3.2.2 Wildlife

According to the Site-wide Characterization Report (ICI/SAIC, 1995), resident mammals commonly found in commercial/industrial areas and other disturbed areas, such as the proposed location of the new fire station, include eastern cottontail rabbit (*Sylvilagus floridanus*), chipmunk

(*Tamias striatus*), opossum (*Didelphis virginiana*), and gray squirrel (*Sciurus carolinensis*). Birds, such as pigeon (*Columba leucocephala*), killdeer (*Charadrius vociferous*), English sparrow (*Passer domesticus*), mockingbird (*Mimus polyglottos*), and red-winged blackbird (*Agelaius phoeniceus*) are also often observed in this area type.

3.2.3 Threatened and Endangered Species

Compliance with Air Force Policy Directive (AFPD) 32-70 and AFI 32-7064 requires all Air Force properties to protect species classified as endangered or threatened under the Endangered Species Act of 1973 (ESA) and to comply with State of Ohio Law 1531.25 and its implementing regulations for species listed by the state as threatened and endangered. To comply with these requirements, WPAFB developed an Endangered Species Management Plan (BHE, 2001).

Federal- and state-listed species at WPAFB include the Indiana bat (*Myotis sodalis*), bald eagle (*Haliaeetus leucocephalus*), eastern massasauga rattlesnake (*Sistrurus c. catenatus*), clubshell (*Pleurobema clava*, a mussel), and blazing star stem borer (*Papaipema beeriana*, a moth).

The eastern massasauga rattlesnake is a federal candidate species usually found in wet areas including wet prairies, marshes, and low lying areas. Neither the historic nor current population size and status of massasaugas at WPAFB have been determined. Reports of massasauga sightings have been limited to the Prime BEEF Training Area and Twin Base Golf Course. Because the massasauga rattlesnake is a federal candidate species, there is no requirement to survey construction areas for potential snake habitat. No sightings of the massasauga rattlesnake have been reported within the proposed location of the new fire station or any buildings proposed for demolition.

The Indiana bat habitat follows the lower reaches of Hebble Creek, Trout Creek, and the riparian corridor of Mad River from its northern reach in Area A to its confluence with Hebble Creek (ICI/SAIC, 1995; BHE/IT, 1999) where this species roosts during the summer and forages in the floodplain/riparian forests. In July 2000, two Indiana bats (a juvenile female and an adult post-lactating female) were captured along Trout Creek during a base-wide mist net survey (BHE, 2001). Radio tracking of these two bats confirmed the presence of a maternity colony in a dead slippery elm (*Ulmus rubra*) in a woodlot on the campus of Wright State University. No sightings of Indiana bats have been reported within the proposed location of the new fire station

or any building proposed for demolition. The bats captured in 2000 were located in an area approximately 2.25 miles from the proposed construction site.

Copies of correspondence with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish & Wildlife Service (USFWS) regarding the potential occurrences of threatened and endangered species in the project areas are provided in Appendices A and B, respectively.

3.3 Water Resources

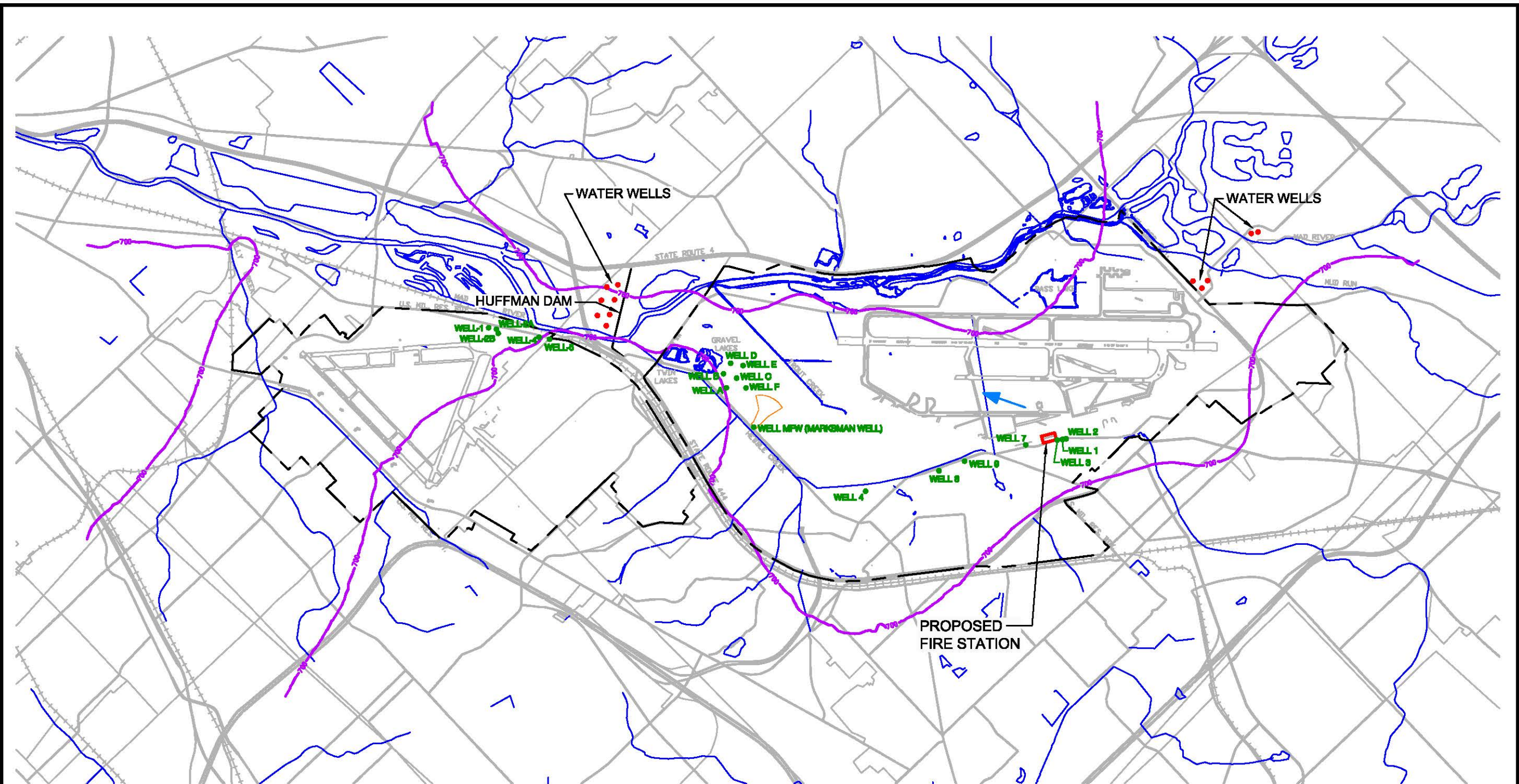
This section presents the groundwater, surface water, wetlands and floodplain features at the proposed fire station location in Area C.

3.3.1 Groundwater

The proposed location of the new fire station is within the boundary of the Buried Valley Aquifer, which follows the Mad River through this region (Figure 3.3-1). The Buried Valley Aquifer is a designated sole source aquifer under United States Code (USC) §1424(e) of the Safe Drinking Water Act (53 FR 15876) and OAC §3745-27-07(B)(5). Water production in this area is very prolific, yielding over 2,000 gallons per minute (gpm) to water supply wells, with the aquifer being very responsive to applied stresses. The Buried Valley Aquifer supplies water to the City of Dayton, local private wells, and WPAFB water supply wells No. 1, 2 and 3 located due east of the site (Dumouchelle et. al., 1993). In the vicinity of the proposed fire station the aquifer is conceptualized as an unconfined aquifer with fine to coarse-grained alluvial deposits (sand and gravel) in the subsurface (Geraghty & Miller, 1987). Water levels vary between seasons ranging from approximately 11 feet (ft), below ground surface (bgs) in the spring to approximately 12 ft, bgs in the fall. Regional groundwater flow is typically southwest toward the Mad River and the Huffman Dam well field (Figure 3.3-1).

Groundwater Quality

Groundwater quality for WPAFB is monitored collectively as the Groundwater Operable Unit (GWOU) through the Long-term Monitoring (LTM) Program. Groundwater in the vicinity of the proposed fire station location is monitored semiannually for volatile organic compound (VOC) contamination. The chemicals of concern in this area include the VOCs tetrachloroethene (PCE) and trichloroethene (TCE). PCE occurs predominantly in the shallow portion of the aquifer while TCE occurs in the lower zones. Current concentrations of PCE and



LEGEND:

- BASE BOUNDARY
- TOP OF BEDROCK ELEVATION CONTOUR (ft, msl)
(APPROXIMATE BOUNDARY OF BURIED VALLEY AQUIFER)
- WPAFB DRINKING WATER WELL LOCATIONS
- WATER PRODUCTION WELL
- GROUNDWATER FLOW DIRECTION



Figure 3.3-1

BOUNDARY OF THE BURIED VALLEY AQUIFER

PREPARED FOR

**WRIGHT-PATTERSON
AIR FORCE BASE
DAYTON, OHIO**



IT CORPORATION
11499 CHESTER ROAD
CINCINNATI, OHIO 45246

TCE are approximately 9.3 and 7.3 micrograms per liter ($\mu\text{g/L}$), respectively. Both chemicals exceed their Maximum Contaminant Level (MCL) for drinking water of 5 $\mu\text{g/L}$.

Groundwater at Buildings 30206, 30201 and 11405 occurs under conditions similar to those for the new fire station location (see above). The exception is the depths to water at Buildings 30201 and 11405, which are approximately 25 ft and 28.5 ft, bgs, respectively. Water quality in the vicinity of these buildings is monitored under the LTM Program and is presented in the October 2002 LTM Report (IT, 2002).

Groundwater in the vicinity of Building 20090, adjacent to Area B, occurs in what is classified as the Hill Aquifer in the WPAFB groundwater flow model (IT, 1997a). This aquifer is characterized by a low hydraulic conductivity and low groundwater flow rate. Groundwater in this area occurs at approximately 16 ft, bgs. Additional hydrogeologic information on this area can be found in the Operable Unit 9 Remedial Investigation Report (IT, 1997b).

3.3.2 Surface Water

WPAFB is located within the Mad River valley of the Great Miami River Basin. The Mad River empties into the Great Miami River near downtown Dayton, Ohio, approximately 5.5 miles downstream (southwest) of Huffman Dam. Surface water bodies and courses located in the vicinity of the WPAFB are presented in (Figure 3.3-2) and Base include:

- Mad River
- Hebble Creek
- Trout Creek
- Twin Lakes
- Gravel Lake
- Drainage ditches located adjacent to roads and runways
- Wetlands.

Recharge of the local groundwater aquifer occurs at each of these water bodies.

The Mad River is the primary surface water drainage within this region, draining 625 square miles upstream of Huffman Dam [U.S. Geological Survey (USGS, 1993)]. Huffman Dam was constructed on the Mad River, completed in 1921, to control flooding in nearby Dayton, Ohio. Base flow in the river averaged 692 cubic feet per second (cfs) during the period between 1974 and 1993 (USGS, 1993).

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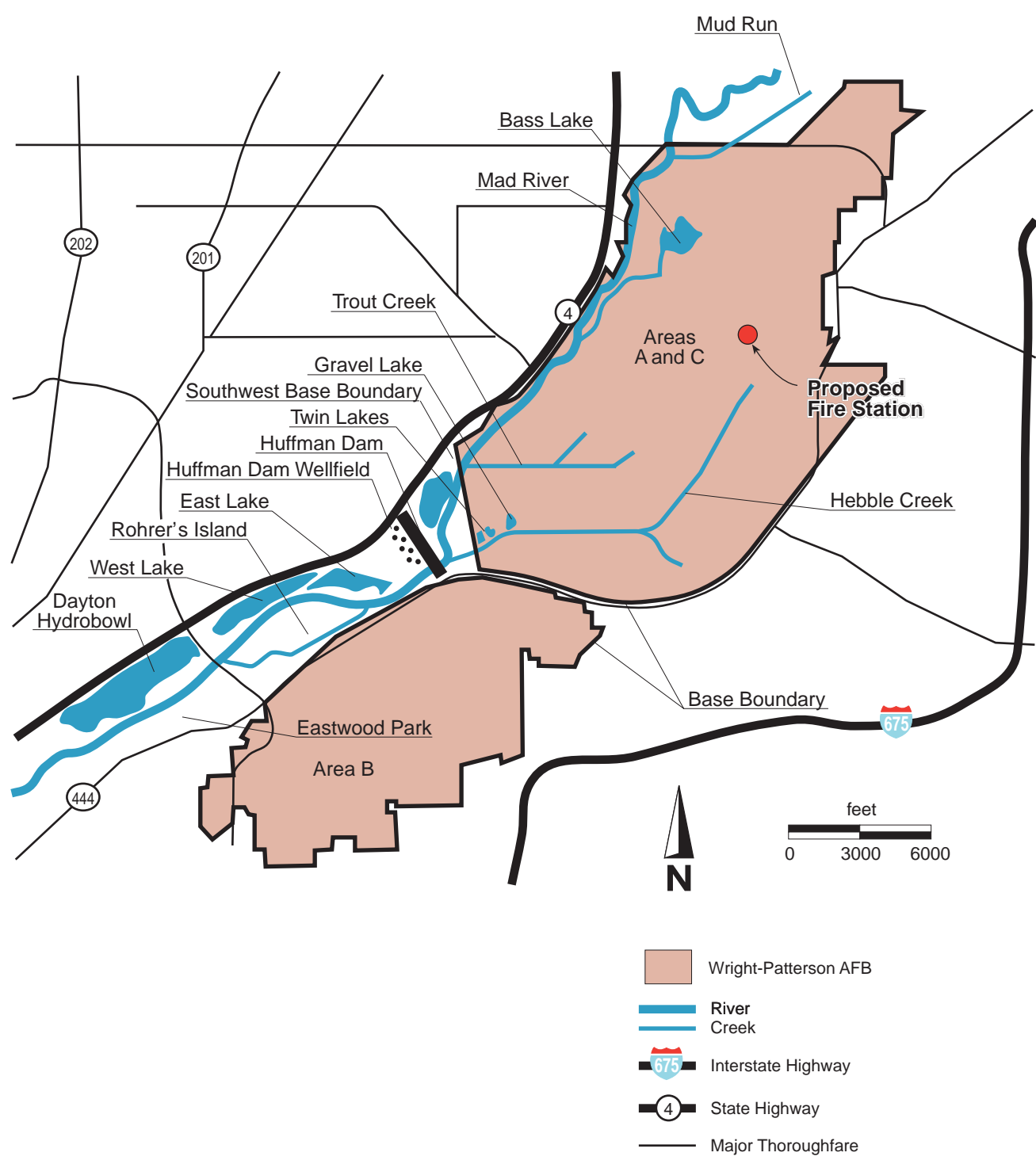


Figure 3.3-2. Location of Regional Surface Water Features.

Source: after Dumouchelle and others, 1993



Hebble Creek, Trout Creek, the Twin Lakes, and Gravel Lake are the most prominent surface water bodies in this portion of Area C. Hebble Creek is a perennial stream that flows through underground culverts located adjacent to Skeel Avenue and the proposed fire station location. Hebble Creek originates east of the City of Fairborn and ultimately discharges into the Mad River.

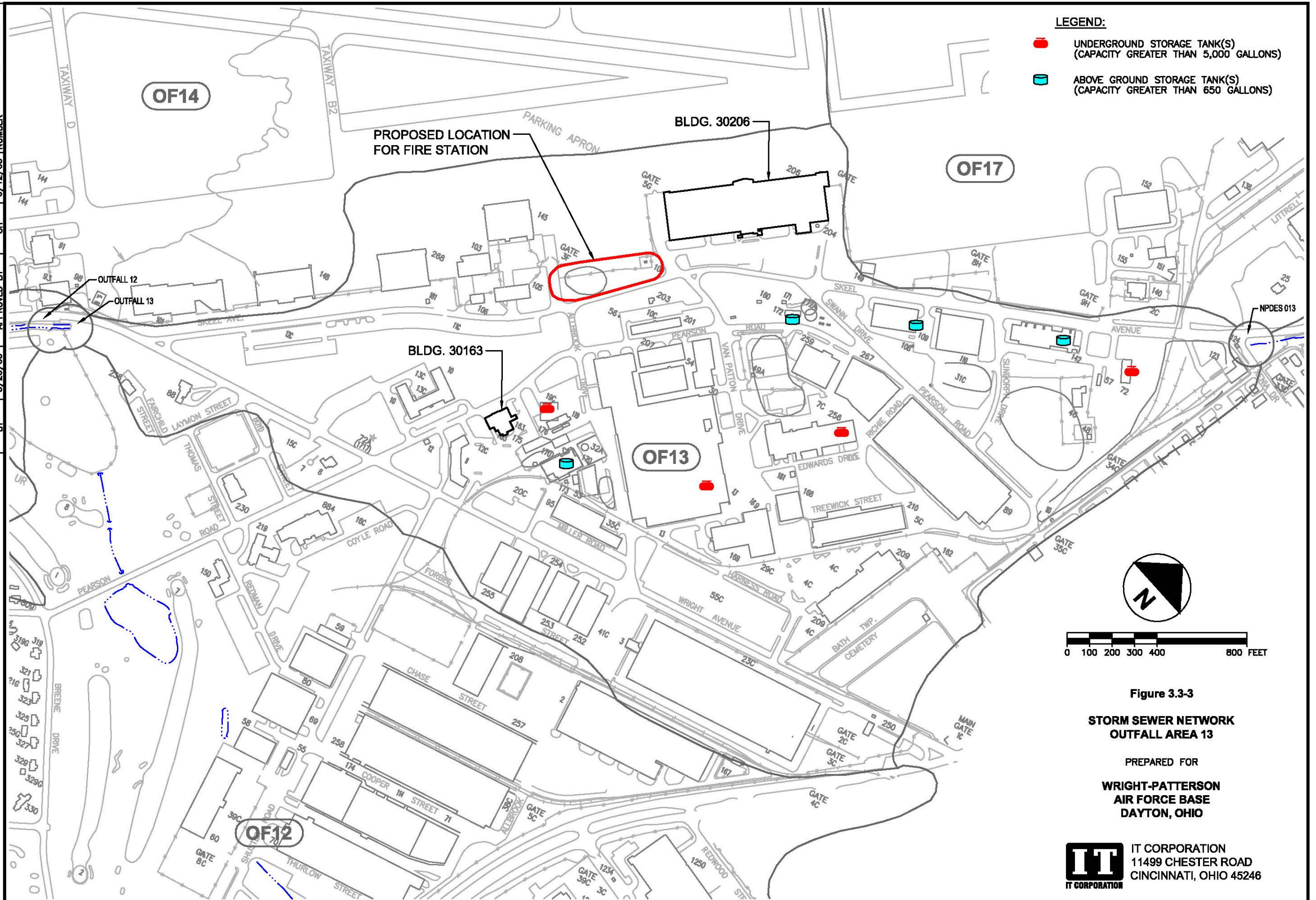
The current and new fire station locations are located in Storm Sewer Network Outfall Area No. 13 (Figure 3.3-3). This outfall area drains to Hebble Creek near the intersection of Skeel Avenue and Wright Avenue. Hebble Creek discharges into the Mad River through National Pollution Discharge Elimination System (NPDES) Outfall 004. This outfall is sampled and monitored for the parameters of oil and grease, iron, total suspended solids, pH and temperature. Compliance levels for the parameters monitored by NPDES permits 003 and 004 are as follows: pH – 8.2; Total Suspended Solids (TSS) – 4.0 mg/L; oil and grease – 5.7 mg/L; and iron – 92 µg/L.

The land surface bordering the proposed fire station site consists primarily of the aircraft parking apron, Skeel Avenue and narrow strips of lawn. The impermeable concrete and asphalt surfaces generate the majority of the runoff from this area.

Construction of the new fire station will occur in the lawn area between the aircraft parking apron and Skeel Avenue. Storm water runoff from construction activities can impact water quality by contributing sediment and other pollutants exposed at construction sites. The NPDES Storm Water Program requires operators of both large and small construction sites to obtain authorization to discharge storm water under an NPDES construction storm water permit. In 1990, the Phase I Storm Water regulations addressed construction activities that disturbed five or more acres of land (40 CFR 122.26(b)(14)(x)). The NPDES Storm Water Program also addresses small construction activities, i.e., those that disturb between one and five acres of land, as a result of the Phase II rule. The Phase II rule became effective on 10 March 2003.

General surface water features at Buildings 30206, 30201 and 11405 are similar to those for the new fire station location (see above). Building 20090 is located on a sloping hillside. The surrounding surface water features in this area include large drainage ditches that drain portions of Area B and smaller ditches that run adjacent to National Road.

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3.3.3 Floodplain

The Base Civil Engineering Office uses 814.3 ft above Mean Sea level (MSL) as the 100-year floodplain elevation (ICI/SAIC, 1995). This elevation is based on U.S. Army Corps of Engineers (USACOE) data. The floodplain elevation was determined by the USACOE using HEC-1 Hydrograph model with Bulletin 71 rainfall data and the incorporation of the added storage from the CJ Brown Reservoir just northeast of Springfield, Ohio (WPAFB, 1994b). Land surface elevations in the vicinity of the proposed fire station location are characterized by flat topography with a surface elevation of 814 to 814.5 ft above MSL. A 100-year flood event would only minimally impact the new fire station location.

Building 11405 is at approximately the same elevation as the proposed new fire station location and the description presented above would also pertain. The remaining three sites are all located above the Mad River 100-year flood elevation of 814.3 ft above MSL.

3.3.4 Wetlands

A wetlands delineation was conducted on WPAFB in 1999 (BHE, 1999) using the Routine Onsite Determination Method (USACOE, 1987). A total of approximately 23 acres of wetlands were delineated in Areas B and C. No wetlands have been identified in Area A. Area B contains 1 acre of forested wetlands, 0.94 acres of scrub/shrub wetland, and 0.9 acres of emergent wetland. Area C contains 11.65 acres of forested wetlands, 0.68 acres of scrub/shrub wetlands, 5.29 acres of emergent wetlands, and 2.28 acres of open water wetlands.

Locations of the wetlands identified on the base are provided in Figures 4-1 through 4-3 of the *Integrated Natural Resources Management Plan* (WPAFB, 2001a). No wetlands are located in the vicinity of the proposed site for the new fire station on Skeel Avenue, which lies in Area C. The nearest wetlands are east of the area the Mad River, nearly 1.5 miles away. No wetlands are located in the vicinity of the buildings proposed for demolition.

3.4 Installation Restoration Program (IRP)

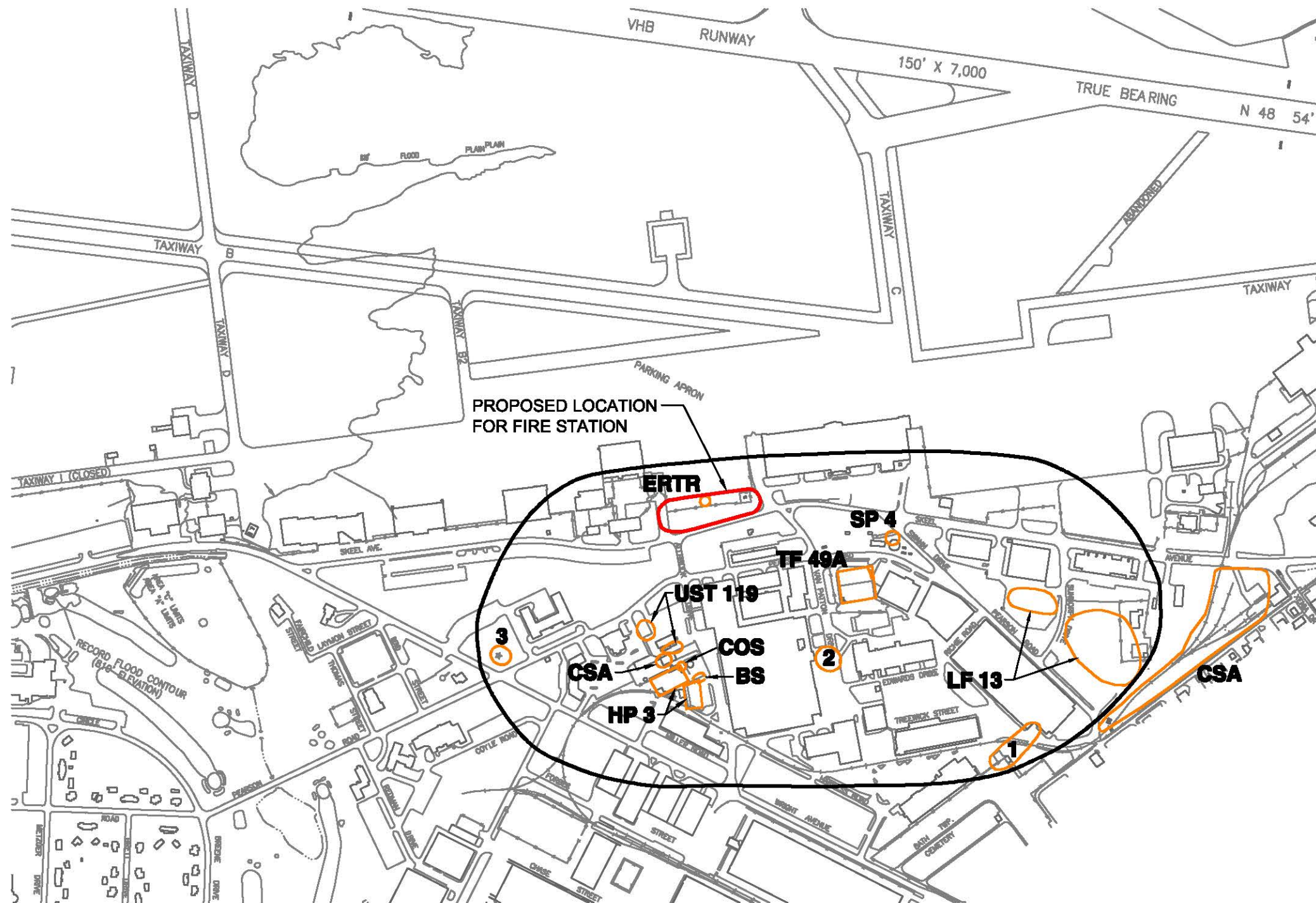
The Department of Defense (DoD) developed the IRP to identify, assess, and control potential environmental contamination that may have resulted from past operations and waste disposal practices. The IRP, an element of the Defense Environmental Restoration Program, is a part of the environmental program at each DoD installation. At WPAFB, the IRP is administered by the 88th Air Base Wing, Air Force Materiel Command, through the Office of Environmental

Management, Operations Branch. The base IRP is regulated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and a Federal Facility Agreement with the U.S. Environmental Protection Agency (USEPA) Region V and Order on Consent with OEPA. WPAFB currently has identified 68 IRP sites per the Air Force Restoration Information Management System (AFRIMS). WPAFB has grouped all confirmed or suspected sites requiring investigation and characterization in 11 geographically-based Operable Units (OUs), designated OUs 1 through 11 (IT, 1999). In addition to the 11 OUs, WPAFB addressed basewide issues of groundwater and surface water contamination under the Basewide Monitoring Program (BMP) (IT, 1995).

The proposed location of the new fire station is within the boundary of OU10 (Figure 3.4-1). OU10 consists of the following IRP sites: Landfill (LF) 13, Tank Farm (TF) 49A, UST30119, and Central Heating Plant (CHP)-3, which is divided into three separate study areas. The areas associated with CHP-3 include the former coal storage area (CSA), the former compressor oil sump area, and the battery burial site (BBS). A remedial investigation (RI) of these sites was conducted in 1994 through 1995 (CH2M Hill, 1995). In addition, a TCE/PCE plume area (flightline area) and three other areas of potential contamination were also investigated during the RI. These three areas included: a soil gas anomaly at the base flagpole (Building 30010), a former oil compressor sump area (Building 30013 sump pit), and a PCE soil gas anomaly at the east end of Building 30089 (CH2M Hill, 1995).

In 1996, a Record of Decision (ROD) was prepared for 21 IRP sites at the base, including the four OU10 IRP sites (LF13, TF49A, UST30119, and CHP-3 and associated area) and the three areas of potential contamination. The No Further Action remedy was selected for these sites (WPAFB, 1996). The TCE/PCE plume area is being monitored under the BMP. As stated in Section 3.3.1, current concentrations of TCE and PCE exceed the MCLs.

Two additional IRP sites are located in OU10; these sites were not investigated during the OU10 RI effort (Figure 3.4-1). These sites include the East Ramp Tank Removal (ERTR) site and Spill Site 4 (SP4). The ERTR site is located within the area proposed as the location for the new Fire Station. Depending on the final design of the facility, a portion of the fire station could be located adjacent to or over this site.



- LEGEND**
- OU10 BOUNDARY
 - SITES (LOCATIONS APPROXIMATE)
 - BS** BURIAL SITE
 - COS** COMPRESSOR OIL SUMP
 - CSA** COAL/CHEMICAL STORAGE AREA
 - ERTR** EAST RAMP TANK REMOVAL
 - HP** HEATING PLANT
 - LF** LANDFILL
 - SP** SPILL SITE
 - TF** TANK FARM
 - UST** UNDERGROUND STORAGE TANKS
 - 1** VOC SOIL VAPOR ANOMALY
 - 2** BUILDING 13 SUMP PIT AREA
 - 3** VOC ANOMALY AT THE FLAG POLE

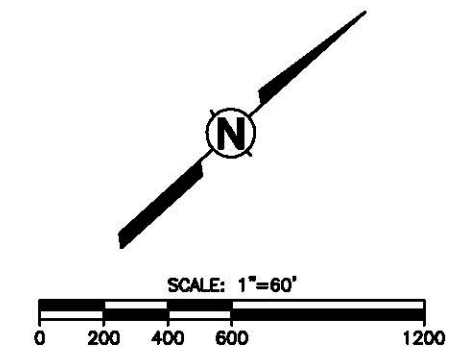


Figure 3.4-1
 IRP, BUSTR, and other
 Sites of Interest within OU10
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 Wright-Patterson Air Force Base
 Dayton, Ohio

The ERTR site was the location of a 12,000-gallon UST that had been abandoned in place prior to 1970. Records indicated that the tank was part of a defueling system and had contained leaded gasoline. No inventory or operation records existed due to the length of time the tank was out of service. The tank was removed in December 1988 as part of a Military Construction Project. The closure was conducted in accordance with Bureau of Underground Storage Tank Regulation (BUSTR) and USEPA regulations for USTs. During removal activities, minimal soil contamination was encountered in the vicinity of the fill pipe connection to the tank (approximately 12 ft bgs). All visibly contaminated soil was removed (SAIC, 1991; USAF, 1991; WPAFB, 1998). Five confirmatory samples were collected after the tank and contaminated soil were removed. Results indicated that only low concentrations of VOCs and total petroleum hydrocarbons (TPH) remained in the soil (SAIC, 1991; USAF, 1991). Based on current site conditions (i.e., industrial), the conclusions of a qualitative risk assessment, and the concurrence of the Ohio State Fire Marshal, it was concluded that no action was needed to ensure protection of human health and the environment under current and future land use (WPAFB, 1998).

In 1998, the ERTR and SP4 sites were included in the 41 No Action Sites Record of Decision (ROD) (WPAFB, 1998). The No Further Action remedy was selected for these sites.

Buildings 30163, 30206, and 30201, which are proposed for interior, partial, and complete demolitions, respectively, are also located within OU10. None of these buildings are located over an IRP site.

Building 20090, which is proposed for complete demolition, is located within the boundary of OU9; however, the building is not located over or adjacent to any IRP site. The nearest IRP sites are located approximately 700 ft north (Central Heating Plant 5) and 1,000 ft south (Earthfill Disposal Zone 6) of Building 20090. A description of OU9 can be found in the *Final Environmental Assessment for Construction of Child Development Center* (USAF, 1998).

Building 11405, which is also proposed for complete demolition, is not located within an OU but is located adjacent to OU4. A description of OU4 can be found in the *Final Environmental Assessment for the Construction of Fully Contained Small Arms Range Complex* (USAF, 2002).

3.5 Land Use

WPAFB is divided into three areas: A, B, and C. Area A contains primarily administrative activities; Area B focuses on research and development; and Area C is dominated by airfield operation, maintenance, and civil engineering activities. The base encompasses 8,145 acres and is classified as non-industrial with mixed development. Ten major land use categories have been identified on WPAFB (BHE/IT, 1999).

The proposed location of the new fire station is situated in an area currently classified as Industrial. The areas adjacent to the proposed location of the new fire station are classified as Aircraft O&M and Airfield and Open Space (Woolpert, 2001).

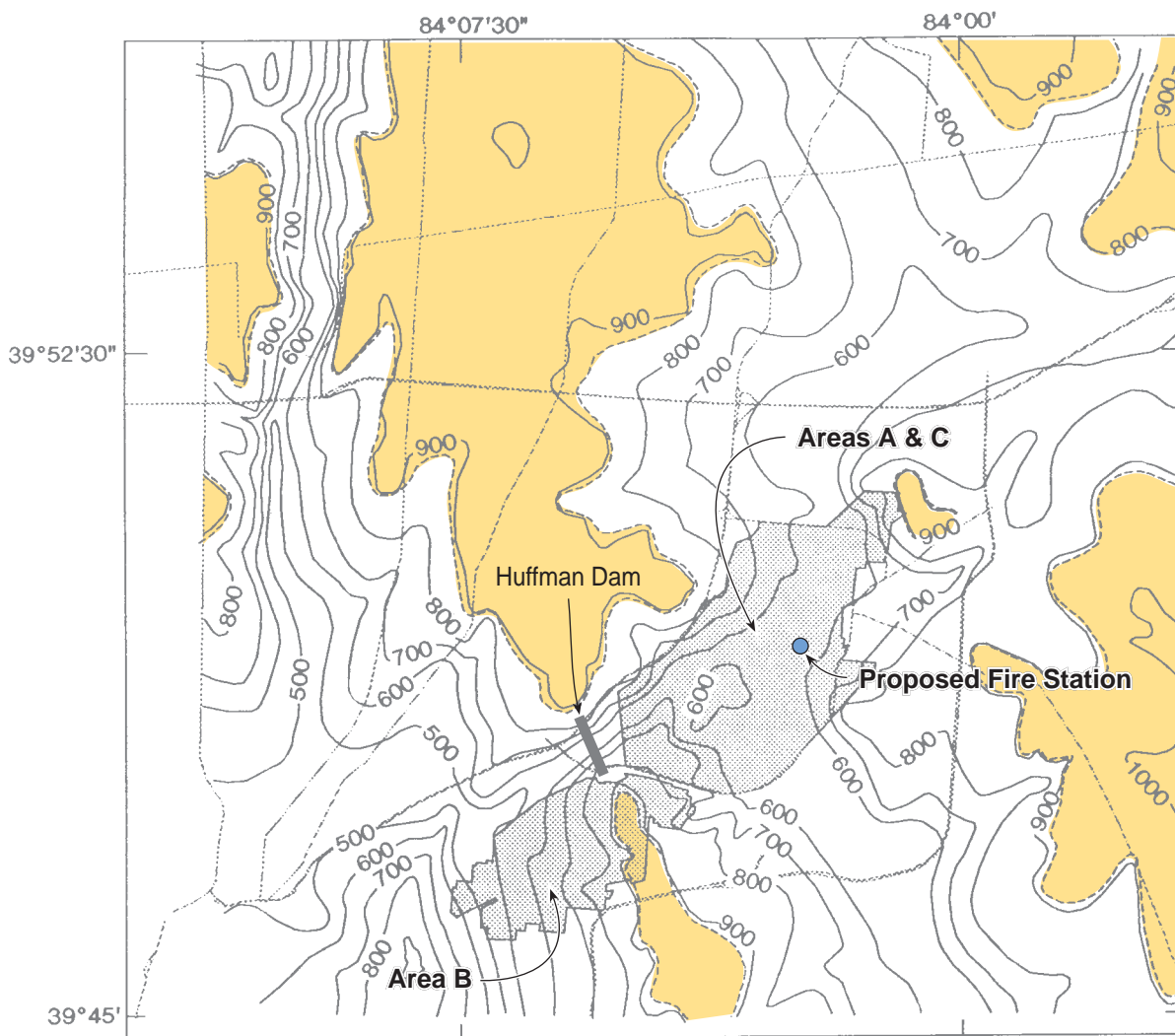
Buildings 30163 and 300201 are situated in areas currently classified as Industrial. Building 30206 is situated in an area currently classified as Aircraft O&M and Airfield. Buildings 20090 and 11405 are situated in areas currently classified as Housing Accompanied and Administrative, respectively (Woolpert, 2001).

3.6 Soils

The geologic description of this region of WPAFB is based on discussion presented in Norris and Spieker (1966), Dumouchelle et al. (1993), and data collected during the RI for OU10. In summary, the site location overlies a buried Pleistocene valley. Pre-glacial Teays Stage and interglacial Deep Stage drainage systems (Figure 3.6-1) eroded this valley down to Paleozoic shale and limestone. The valleys formed during the development of these drainage systems have been filled and obscured by outwash and till deposits formed during Wisconsin glacial stages and by alluvium deposited by modern streams in the area. The glacial and alluvial deposits form the Buried Valley Aquifer, a major source of water to the area. Further details on the area geology can be found in the OU10 RI report (CH2M Hill, 1995).

The U. S. Department of Agriculture (USDA) Soil Conservation Service (SCS) soil survey of Greene County, Ohio (USDA-SCS, 1978), indicates that the surface soils throughout this portion of the base are of the Warsaw Series. Warsaw soils consist of nearly level, well drained soils that formed in loamy glacial outwash over sand and gravel at a depth of 24 to 40 inches bgs. Available water capacity is moderate. Permeability is moderate in the upper zone and rapid in the underlying sand and gravel. The surface layer is high in organic matter content.

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	6/13/03	6/15/03
CHECKED BY	GP	CH
	JIS, III	5/21/03
APPROVED BY		
DRAWING BY		



EXPLANATION




-  WRIGHT-PATTERSON AIR FORCE BASE
- 800 — TOP-OF-BEDROCK CONTOUR--Contour interval 100 feet. Datum is sea level
- SILURIAN-ORDOVICIAN CONTACT
-  Ordovician Shale Subcrop
-  Silurian Limestone Subcrop



Figure 3.6-1. Regional Bedrock Topography.

Source: Dumouchelle and others, 1993

Surficial soils at the proposed fire station site are classified as the Urban land complex. These soils have been largely altered or covered by grading and digging. Approximately 15 to 30 percent of the area is covered by buildings, driveways, and streets.

Subsurface soils surrounding the former ERTR (Section 3.4) were given clean closure under BUSTR. Tank closure was documented in the ROD for 41 Sites (WPAFB, 1998). During tank removal activities in December 1988, visibly contaminated soil was removed and the area around the tank was excavated until clean soil was visible. The base of the concrete tank cradle was at a depth of approximately 20 feet bgs.

Surficial and subsurface soils at Building 30201 and 30206 are similar to the description presented above for the new fire station location. Soils in the vicinity of Buildings 11405 and 20090 are described in the OU4 RI report (CH2M HILL, 1994).

3.7 Cultural Resources

Over 300 recorded or potential cultural resources have been identified within WPAFB, including prehistoric and historic archaeological sites, historic structures, and historic landscapes (WPAFB, 1999). The base contains a number of significant cultural resources among those recorded.

The first large-scale prehistoric site survey at the base occurred in 1990 by the US Army Construction Engineering Research Laboratory (USACERL). Additional surveys by USACERL were conducted in 1991, 1992 and 1994. From November 1994 through April 1995, archaeological surveys were conducted at WPAFB by Great Lakes Archaeological Research Center, Incorporated (GLARC, 1996). In addition, surveys were conducted in 1995 and 1996 by Earth Tech/NES, Inc. (NES, 1996). Results from these surveys, plus additional surveys conducted at the base, have been summarized and presented in the *Cultural Resources Management Plan* (CRMP) (WPAFB, 1999). The CRMP identifies archaeological sites, historic structures, and other significant cultural resources on WPAFB. A subsequent archaeological survey of selected areas on the base was conducted in 2001. Cultural resources identified in the vicinity of the proposed construction site for the new fire station are summarized below.

Based on information provided in the CRMP, it does not appear that any surveys have been conducted at the proposed location for the new fire station on Skeel Avenue. The proposed construction site for the new fire station is located in a portion of the base that has disturbed

soils. The flightline and buildings have been present in this area since World War I (WPAFB, 2003f). According to the CRMP, this area has low current archaeological potential and moderate to low prehistoric archaeological potential. Disturbance of soil indicated that there is no potential for prehistoric sites. The survey for historic archeological sites identified no historic sites in this location. Therefore, no archaeological survey is needed for this area (WPAFB, 2003f). According to the CRMP, the nearest sites of interest are two “potentially ineligible sites” approximately 1,000 ft south of the proposed construction area. A potentially ineligible site is one that has been identified as being destroyed or disturbed. These sites, R8 T3 S26 #6 and R8 T3 S26 #7, are classified as “Residential” sites (WPAFB, 1999). The proposed construction site does lie within the Fairfield Air Depot Historic District.

Buildings 30163, 30206, and 30201 are located in the vicinity of the proposed location of the new fire station and are within the Fairfield Air Depot Historic District. Building 30163 and Building 30206 are listed in the CRMP as “eligible” for registration on the National Registry of Historical Places (NRHP). However, the vehicle bay for Building 30206 was an addition to the building and is considered “potentially ineligible” (WPAFB, 2003f). Building 30201 is considered “ineligible” for listing on the NRHP (WPAFB, 1999). Building 30163 is located within 50 to 100 ft of two potentially ineligible sites, R8 T3 S26 #6 and R8 T3 S26 #7, described previously.

Buildings 20090 and 11405 are not located within a historic district. Building 20090 is considered a “non-conforming” structure. Building 11405 is considered “ineligible” for listing on the NRHP (WPAFB, 1999).

According to the CRMP, the areas surrounding the buildings proposed for demolition have low archaeological potential and moderate to low prehistoric archaeological potential. The CRMP does identify one “potentially ineligible site” near Building 11405. This site, R8 T3 S31 #5, is classified as “Residential” and is located approximately 250 ft to the north (WPAFB, 1999). A potentially ineligible site (R8 T2 S1 #2, Residential), a historic eligible site (33 GR 1033, Residential), and a historic ineligible site (33 GR 1022, School) are located approximately 500 ft north of Building 20090. A Phase II archaeological survey is planned for Site 33 GR 1033. The building demolition would not be expected to impact this site.

3.8 Air Quality

The Clean Air Act Amendments of 1990 (CAAA) tasked the USEPA with generating a set of rules governing the establishment of air quality standards and rules governing emissions of pollutants. The CAAA of 1990 establishes a diverse program of air quality improvement activities involving research, air pollution controls on motor vehicles, controls of emissions of toxic materials, and issuing federal permits for air pollution sources (WPAFB, 1994c). Included in this program of air quality improvement activities is a mandate in Title I to USEPA to establish National Ambient Air Quality Standards (NAAQS). Accordingly, USEPA has set NAAQS concentration limits for the following pollutants, often referred to as "criteria air pollutants": carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO₂), lead, ozone (O₃; note: emissions of volatile organic compounds or VOCs are regulated as precursors of ozone), and particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5}). Air quality issues associated with the proposed action for this EA are primarily related to excavation for and construction of the new fire station and the parking lot. In addition, there are air quality issues associated with the demolition of Buildings 11405, 20090, and 30201 and partial demolition of Building 30206. As shown in Figure 2.4-2, Buildings 30201 and 30206 are located in the vicinity of the project area in Area C. Buildings 11405 and 20090 are located in Areas A and B, respectively.

WPAFB is located in the Dayton/Springfield area. This area is currently in attainment of all pre-1997 NAAQS [40 CFR 81.336]. In the 5 May 1995 *Federal Register* notice [60 FR 22289], this area was re-designated as "attainment" for ozone. As part of re-designation, the Dayton/Springfield area is considered a maintenance area for at least 10 years after re-designation. Because the base is located in a maintenance area that has a vehicle emissions testing program, all base fleet vehicles and employees' privately owned vehicles must undergo emissions testing, even if registered outside of an E-Check county. This requirement is mandated by Section 118c of the CAAA (42 USC 7418). In 1997, USEPA issued a new 8-hr NAAQS for Ozone replacing the 1-hr standard. The U.S. Court of Appeals for the D.C. Circuit withheld the implementation of the standard. The U.S. Supreme Court reversed the U.S. Court of Appeals decision. USEPA is reviewing the results of the litigation to determine the approach and schedule for implementation. The Regional Air Pollution Control Agency (RAPCA) in Dayton, Ohio (Ohio EPA local air agency regulating operations at WPAFB) has data indicating that Greene and Montgomery counties do not meet the new 8-hr ozone standard and an official re-designation as "non-attainment area" shall occur at a later date.

3.9 Noise

Noise can be defined as sound that is undesirable because it disrupts speech communication and hearing, is intense enough to damage hearing, or is otherwise irritating. Noise levels associated with WPAFB operations can create conflicts related to activities both on and off the base. Flight activities on WPAFB that contribute to the noise environment include the 445th Airlift Wing, the 47th Airlift Flight, and the Aero Club. The base also receives transient aircraft that represent the largest user group at 45 to 50 percent of the aircraft arriving and departing. The second largest user is the Aero Club.

When measuring sound to determine its effect on human population, A-weighted sound levels in decibels (dBA) are typically used to account for the response of the human ear. A-weighted sound levels represent adjusted sound levels according to a prescribed frequency response established by the American National Standards Institute (ANSI, 1983). An unusual property of noise is that the sound pressure levels of two separate sounds are not directly additive. For example, two sounds of 70 decibels (dB) each occurring in the same location results in a cumulative noise level of 73 dB, not a doubling to 140 dB. In addition, if two sounds are of different levels, the lower level adds less to the cumulative total as the difference increases. For example, if a 60 dB noise source is used in conjunction with a 70 dB noise source, then a cumulative noise level of 70.5 dB would result. When two noise sources have greater than 10 dB difference, the lower noise source adds almost nothing to the higher noise level.

Noise levels can be considered in terms of levels ranging from those in a typical home at 40 dB, and levels at which noise begins to harm hearing if exposed for a long period (8 hours) at 90 dB. The following conclusions were obtained using 65 to 70 dB as a general background noise level and following USEPA prepared responses to sound-level increases (Chemical Nuclear Systems, 1990):

<u>Sound-Level Increase</u>	<u>Expected Community Response</u>
0 to 5 dB	No observed reaction
5 to 10 dB	Sporadic complaints
10 to 15 dB	Widespread complaints
15 to 25 dB	Threats of community action
More than 25 dB	Vigorous community action

Typical noise sources in and around the proposed fire station include aircraft and human activities. Military (and civilian) aircraft operations are the existing primary sources of noise in the vicinity of the flying field.

The L_{dn} is an accepted unit for quantifying human annoyance to general noise that has been officially adopted for aircraft noise impact characterization and land use compatibility planning in the United States. This unit is the time-integrated average A-weighted sound level during a 24-hour period. Specific L_{dn} land use compatibility criteria have been adopted by the Federal Intragency Committee on Noise (FICON, 1992) or the Federal Aviation Administration (FAA) recommended L_{dn} ranges for various land use categories based upon the committee's guidelines. In airport analyses, areas with L_{dn} above 65 dB are often considered in land use compatibility planning and environmental assessments; therefore, the contours of L_{dn} greater than 65 dB are of particular interest.

To address both noise and safety, the DoD required military departments to establish an Air Installation Compatible Use Zone (AICUZ) program. The goal of AICUZ is to promote compatible land use on and off base to minimize noise complaints and safety hazards. According to the AICUZ study, the proposed location of the new fire station is located in the 75 to 79 dB noise zone. According to the AICUZ study, the current Fire Station 1 is located in the <65 dB zone, while current Fire Station 2 is located in the 75 to 79 dB noise zone (WPAFB, 1995). These noise ranges represent existing conditions to which potential noise levels from construction and demolition can be compared.

3.10 Health and Safety

General health and safety issues associated with the proposed fire station include worker safety and public safety during the construction as well as health and safety of the fire protection personnel during the subsequent operation of the facility. For the current fire stations these issues include the health and safety of fire protection personnel as well as public safety under existing conditions. Occupational and public safety issues are also addressed with respect to demolition remediation activities.

Proposed Fire Station

Health and safety issues for the fire station include hazards associated with construction of the complex and its subsequent operation and use. Such hazards include physical hazards

(including heavy and light on-site equipment usage), potential hazardous materials, and underground/overhead utility work.

As discussed in Section 3.4, the proposed construction site is located within OU10. Depending on the final design of the facility of a portion the new fire station could be located adjacent to or over this site.

The Air Force AICUZ program is intended to reduce the potential for aircraft mishaps in populated areas. As a result of this program, WPAFB has altered basic flight patterns to avoid heavily populated areas. In additions, airfield safety zones were established under AICUZ to minimize the number of people who would be injured or killed if an aircraft crashed. Three safety zones are designated at the end of all active runways: Clear Zone, APZ I, and APZ II. The Clear Zone represents the most hazardous area. Although administrative uses (industrial, business services, manufacturing) are permitted in the APZs, “people-intensive” uses (e.g., auditoriums, classrooms) are discouraged in these areas. According to AFI 32-7063, all new construction is required to comply with the AICUZ. The proposed site for the new fire station is located outside of all APZs.

As specified in AFMAN 91-201, Explosive Safety Standards, paragraphs 3.13.6 and 3.13.6.11, base fire departments (except for flightline fire stations) are not considered “related” to any potential explosion site and must not be exposed to explosive hazards. Because the consolidated fire station would house a large percentage of the total response capacity, the new station would be considered a “base fire department” rather than a “flightline fire station”.

Under AFMAN 91-201, an Inhabited Building (IB) Distance is a minimum distance required to protect non-explosive related facilities and personnel. Inhabited buildings (including base fire departments) must be afforded up to 1,260 feet of protection from items such as bombs and tactical missiles. The proposed location for the new fire station is outside of current Explosive Safety Zones for the flightline (WPAFB, 2003h).

Current Fire Stations

Deficiencies associated with current Fire Stations 1 and 2 include overall “quality of life” issues for fire crews due to substandard living quarters. In addition, the ventilation systems in these facilities are inadequate and allow diesel fumes into the administrative and living quarters.

Because functions are currently split between two stations, fire response and crash recovery are inefficient. In particular, the Fire Department cannot meet the required crash response time for incidents on the south end of the runway.

Building Demolitions

With respect to demolitions associated with Buildings 11405, 20090, 30163 (interior), 301201, and 30206 (partial), potential physical hazards to workers are similar to the hazards that were presented in Section 3.3.1 of the EIS for building demolition (USAF, 1997). The demolition crew would be responsible for adhering to applicable health and safety regulations (Table 1.4-1).

Potential hazardous materials of concern to demolition projects are described in the Section 3.3.2 (Hazardous Materials Management) of the EIS. These materials generally include: hazardous materials (e.g., munitions, fire retardants, cleaning agents, petroleum products), hazardous waste, storage tanks, asbestos-containing materials, pesticide usage, polychlorinated biphenyls (PCBs), radon, medical/biohazard waste, ordnance, refrigerants, and lead-based paint (LBP). The status of these materials or items is typically determined prior to building demolition. In addition, refrigerants would be recovered as per Base Specification 02091, per Section 5.2 of the Base Facility Standard. LBP would be handled in accordance with Base Specification 02090, per section 9.10.2 of the Base Facility Standard.

Because the current fire stations are existing facilities, there are no requirements to comply with AICUZ. However, the current fire stations are not located in an APZ.

3.11 Socioeconomics

Total population in the Dayton-Springfield Metropolitan Statistical Area (MSA) in 1999 was estimated as 958,698 (U.S. Census Bureau, 2002). Between 1990 and 1999, total population in the MSA increased 0.8 percent. Further description of the population is available from the U.S. Census Bureau (2002).

Employment in the four-county area is concentrated in the services, manufacturing, retail, and government sectors. Income by industry for persons employed in the MSA during 1992 was greatest in manufacturing (29.6 percent), services (24.9 percent), government (18.5 percent), and health services (10.8 percent) (ICI/SAIC, 1995). WPAFB, with 18,373 employees in 2001, provides a major source of employment in the four-county area (WPAFB, 2001b).

It is estimated that 19,777 secondary jobs have been created in private industry in the four-county region surrounding WPAFB. WPAFB awards numerous contracts every year to local businesses. In Fiscal Year (FY) 2000, for example, contract activity in the economic impact region exceeded \$656 million (WPAFB, 2001b).

3.12 Transportation/Traffic

Several major highways are located near WPAFB, including Interstate 675, a major bypass highway situated to the east and south of the base. Interstate 70, a major east/west highway is located north of the base; Interstate 75, a major north/south highway is located west and south of the Base; State Route 444 bisects the base.

From off base, the proposed construction site for the new fire station could be accessed through several gates including Gate 15A on Skeel Avenue to the intersection of Allbrook Drive; Gate 12A on Chidlaw Road to Breene Drive to Pearson Road to Allbrook Drive to Skeel Avenue; or through Gate 1C on Wright Avenue to Allbrook Drive to Skeel Avenue. Based on data collected from 4 April 2003 to 15 April 2003, the estimated average daily traffic count during the weekdays was 5,607 vehicles per day (WPAFB, 2003d). The traffic count northbound on Chidlaw Road (Gate 12A) from 4 April 2003 to 15 April 2003 was approximately 4,816 vehicles per weekday (WPAFB, 2003d). During 21 March 2003 to 28 March 2003, the estimated average daily traffic count during the weekdays southwest bound on Wright Avenue (Gate 1C) was 3,676 vehicles/day. There are no recent traffic counts specifically for Allbrook Drive and Skeel Avenue.

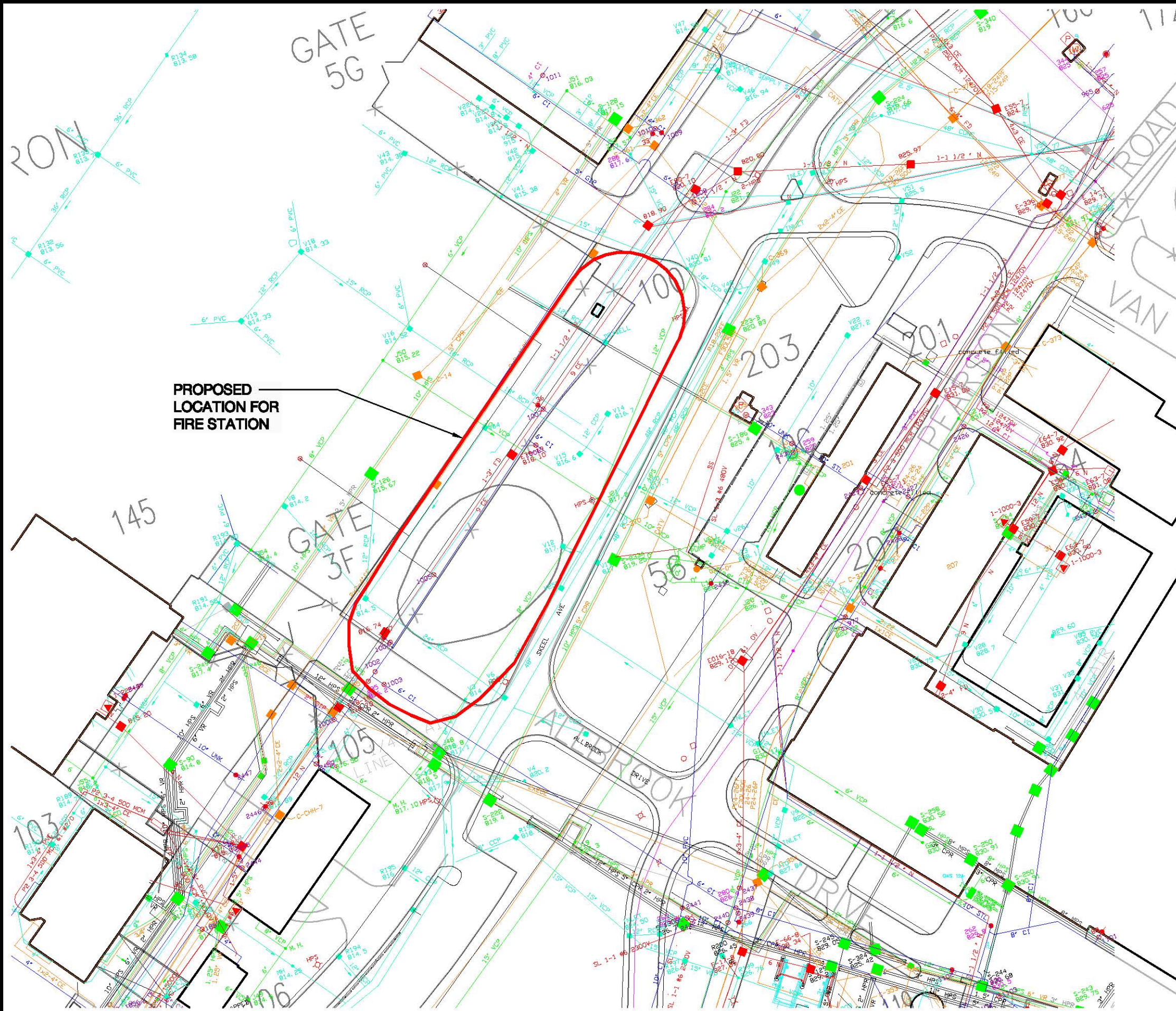
Buildings 30163, 30206, and 30201 are located in the vicinity of the proposed location for the new fire station; traffic patterns/counts would be similar. Building 11405 is located at the entrance of Gate 15A.

Building 20090 is located on National Road between 5th Street and Kauffman Avenue. The 1991 24-hour average daily traffic volume count for Gate 19B into the base at 5th and National Road was 13,103 (Woolpert, 1992).

3.13 Utilities

Buried utility cables and pipelines have been identified along Allbrook Drive and Skeel Avenue and the flightline boundary fence. These subsurface utilities include high-pressure steam lines, sewer lines, communication cables, electric cables, transducer cables, telephone cables, and water lines. An abandoned subsurface fuel line is also located near the flightline boundary fence. The only overhead utility in the vicinity of the fire station building site is a streetlight located on the north corner of Allbrook Drive and Skeel Avenue (Figure 2.4-1). There are also OU10 groundwater monitoring wells located in the lawn area south of Allbrook Drive. Figure 3.13-1 identifies the location of the utilities.

The Base Facility Standard for WPAFB (Section 4.7) specifies the procedures to be followed for projects involving activities such as digging and trenching. Prior to commencing subsurface excavation or fence removal, a Base Civil Engineering Work Clearance Request (AF Form 103) would be required. To obtain AF Form 103, all locations for digging would be clearly numbered or identified. In conjunction with the AF Form 103, a clearance meeting would be held to clear the identified locations.



VISIONS UTILITY LEGEND	
ELECTRIC	---
NATURAL GAS	---
COMM-LOC	---
POL	---
SANITARY	---
STORM	---
WATER	---
NAVIGATION AIDS	---
CATHODIC PROTECTION	---
COMPRESSD AIR	---
HEATING -COOLING	---
A/C UNIT	---

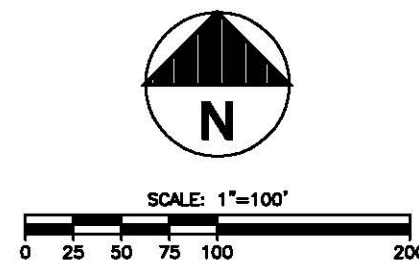


Figure 3.13-1
Utilities in the Vicinity of the
Proposed Location of
the New Fire Station

PREPARED FOR
Wright-Patterson Air Force Base
Dayton, Ohio



IT CORPORATION
 11499 CHESTER ROAD
 CINCINNATI, OHIO 45246

4.0 Environmental Consequences

4.1 Introduction

The purpose of this chapter is to provide an evaluation of the potential impacts associated with the proposed action (construction of a new fire station) as well the No Action alternative presented in Chapter 2.0. The No Action alternative represents the baseline conditions to which the proposed action is compared. The evaluation of the proposed action and alternative is summarized in Table 2.5-1.

The impacts associated with the demolition actions at the existing Fire Department facilities (Buildings 30163 and 30206) and three additional buildings (Buildings 11405, 20090, and 30201) will be tiered from *Final Environmental Impact Statement for the Demolition of Multiple Historic Facilities at Wright-Patterson Air Force Base, Ohio* (USAF, 1997b). General issues relating to routine building demolition will not be covered in this EA but will be referenced to the EIS for building demolition.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 Alternative A: No Action

Vegetation at either location would not be impacted under the No Action alternative.

4.2.1.2 Alternative B: Construction of A New Fire Station

Under Alternative B, minor negative impacts would occur to vegetation at the construction site during site preparation/excavation. The construction site would be graded, which would result in the removal of turf and other cover material. Vegetation at the site impacted would include grasses, weeds, and a limited number of trees; species impacted are those commonly found throughout the base. After construction of the fire station is complete, the area would be landscaped with grasses, ornamental shrubs, and trees.

Some vegetation surrounding the foundations of Buildings 30201, 20090, and 11405 would be disturbed during demolition activities. However, impacts to vegetation would be minor because

the vegetation in these areas is common throughout the base and the areas would be landscaped with similar vegetative species (e.g., grasses) after demolition activities were completed.

4.2.2 Wildlife

4.2.2.1 Alternative A: No Action

There would not be impacts under the No Action alternative.

4.2.2.2 Alternative B: Construction of A New Fire Station

Impacts to wildlife would not be expected during the construction of the new fire station, nor would any long-term impacts be expected. There would be no impacts to wildlife during demolition activities.

4.2.3 Threatened and Endangered Species

4.2.3.1 Alternative A: No Action

Threatened and endangered species would not be impacted under the No Action alternative.

4.2.3.2 Alternative B: Construction of A New Fire Station

No threatened or endangered species are located in the vicinity of the proposed construction site or the buildings to be demolished. Therefore, no impacts would be expected.

4.3 Water Resources

This section presents the potential impacts to groundwater, surface water, wetlands and floodplain features from the construction and operation of the proposed fire station.

4.3.1 Groundwater

4.3.1.1 Alternative A: No Action

Under normal operating conditions for the existing fire stations, the No Action alternative would not impact groundwater. The No Action Alternative would not impact groundwater in the vicinity of the four buildings proposed for demolition.

4.3.1.2 Alternative B: Construction of A New Fire Station

Construction activities to be implemented at the proposed site of the new fire station are described in Section 2.4. Actions that penetrate the land surface at the proposed fire station (removal of the existing fence, trenching for utility lines and building foundation) would be

limited to the shallow subsurface. Because groundwater in this area occurs at approximately 11 to 12 ft bgs, the proposed actions would not alter the subsurface hydrogeology and would not create a potential source of groundwater contamination. Normal operation of the new fire station will not impact groundwater.

Demolition of the four existing buildings proposed for demolition would not impact groundwater quality. Assuming the area would remain vegetated, there would be slightly improved infiltration of precipitation and recharge of the water table aquifer.

4.3.2 Surface Water

4.3.2.1 Alternative A: No Action

Under normal operating conditions for the existing fire station, the No Action alternative is not expected to impact surface water resources. The No Action Alternative would not impact surface water in the vicinity of the four buildings proposed for demolition.

4.3.2.2 Alternative B: Construction of A New Fire Station

Building construction activities at the proposed location will involve minor land surface disturbance while the building and parking lot are being built. As discussed in Sections 1.4 and 3.3.2, a permit for discharge associated with construction disturbance of one to five acres of land would be required under Phase II of the storm water regulations. The Phase II rule became effective on 10 March 2003. The total area to be disturbed during the construction of the new fire station and associated parking lot is expected to be approximately 1 to 1.5 acres. Therefore, a NPDES construction permit from the Ohio EPA would be required.

Although the land surface at this location is flat, erosion control measures would inhibit erosion into Hebble Creek and runoff onto the aircraft-parking apron during heavy rain events.

Construction activities would not alter the surface water hydrology of the area and would not create a potential source of surface water contamination. Therefore, the construction activities for the new fire station facility are not expected to impact surface water resources. The increase in surface water runoff due to the impermeable building structure over the current lawn area would be of minimal impact to Hebble Creek and subsequently the Mad River. Therefore, the normal operation of the new fire station is not anticipated to have long-term impacts on surface water in the area.

The proposed demolition of Buildings 20090, 30201, and 11405 would reduce storm runoff from the roofs and other impermeable surfaces (i.e., parking lots and sidewalks) at these locations. Building 30206 is constructed on the concrete aircraft apron and this area would not be affected.

4.3.3 Floodplain

4.3.3.1 Alternative A: No Action

The current fire station is above the 100-year floodplain; therefore, there is no impact with regard to flooding or floodplain management under the No Action Alternative. Of the four buildings proposed for demolition, Building 30206 is at approximately the same elevation as the proposed fire station location and the remaining buildings are above the floodplain. There would be no impact associated with the No Action Alternative at these locations.

4.3.3.2 Alternative B: Construction of A New Fire Station

As discussed in Section 3.3.3, the Mad River 100-year flood stage at WPAFB is 814.3 ft, MSL. The flood control basin upgradient of Huffman Dam is regulated by the Miami Conservancy District (MCD). Structures or additions of any type within the floodplain behind Huffman Dam shall not be erected more than 5 feet below the Huffman Dam spillway elevation (835 ft, MSL) except by authorization by the MCD (MCD, 1996, 2002). The land surface at the proposed fire station site is at an elevation of approximately 814 ft, MSL, which is below the cutoff elevation for requiring building authorization from the MCD (830 ft, MSL). Construction of the new fire station would not impact floodplain management; however, an authorization letter from MCD would be required. A copy of the correspondence with MCD is provided in Appendix C.

Of the buildings proposed for demolition, only Building 30206 is near the Mad River 100-year floodplain boundary and would be affected similarly to the new fire station location (see above). The remaining buildings are above the 100-year floodplain and demolition would not impact floodplain management.

4.3.4 Wetlands

4.3.4.1 Alternative A: No Action

Wetlands would not be impacted under the No Action alternative.

4.3.4.2 Alternative B: Construction of A New Fire Station

There are no wetlands in the vicinity of the proposed construction site or the buildings proposed to be demolished. Therefore, wetlands would not be impacted.

4.4 Installation Restoration Program Sites

4.4.1 Alternative A: No Action

The No Action alternative would have no impact on any IRP sites.

4.4.2 Alternative B: Construction of A New Fire Station

The proposed construction site is located within the boundary of OU10. An IRP site, ERTR, is located within the area designated for construction (Figure 3-4.1). Depending on the final design of the facility, a portion the fire station could be located adjacent to or even over this site. The UST at the site had been abandoned in place prior to 1970 and was removed in December 1988. Contaminated soils were removed during excavation of the UST. Confirmatory samples taken from the area indicated that organic compounds and TPH are present in the soil at low concentrations. These concentrations were below acceptable limits and are not expected to pose significant health risks. Based on current site conditions (i.e., Industrial), the conclusions of the risk assessment, and the concurrence of the Ohio State Fire Marshal, no action was needed was to ensure protection of human health and the environment under current and future land use (WPAFB, 1998). Because the tank has been removed and no action additional action is needed to ensure protection of human health and the environment under current and future land use, construction of the fire station in this area will have no impact on the IRP site (WPAFB, 2003b).

Buildings 30206, 30201, 20090, and 11405 are not located on any IRPs; therefore, demolition of these building would have no impacts on IRPs.

4.5 Land Use

4.5.1 Alternative A: No Action

Land use would not change under Alternative A. Therefore, Alternative A would have no impact on land use.

4.5.2 Alternative B: Construction of A New Fire Station

Land use would not change at the proposed construction site of the new fire station, at the interior demolition site of Building 30163, and at the demolition sites of Buildings 300201,

300206, 20090, and 11405. Therefore, Alternative B would have no impact on land use in these areas.

4.6 Soils

4.6.1 Alternative A: No Action

Under normal operating conditions the current fire station would not impact area soils under the No Action Alternative. The No Action Alternative would not impact soils in the vicinity of the four buildings proposed for demolition.

4.6.2 Alternative B: Construction of A New Fire Station

Due to the flat land surface and existing concrete surfaces, construction of the new fire station would have minimal potential for soil erosion during the construction of the foundation. Erosion control measures should still be utilized as needed. Construction activities completed under Alternative B are not expected to result in long-term impacts to soils. However, if trenching or other subsurface excavation in excess of 10 ft, bgs is conducted in the vicinity of the former East Ramp UST (Figure 3.4-1), the soils in this area would need to be screened for any residual fuel contamination and/or explosive vapors, in addition to utility clearances. If elevated levels are encountered in this area, a removal action would be initiated through the Office of Environmental Management. Potential soil removal and remediation would be considered a separate action from the building construction.

Normal operation of the new fire station would not have potential impacts to soil.

During the demolition of Buildings 20090, 30201 and 11405, control measures should be implemented to prevent erosion during rain events. This predominantly pertains to Building 30201, which is constructed on a slight grade sloping toward the Area C flightline.

4.7 Cultural Resources

4.7.1 Alternative A: No Action

There would be no impacts under the No Action alternative.

4.7.2 Alternative B: Construction of A New Fire Station

Because the proposed construction site is located in an area that has been disturbed, no impacts to cultural resources are expected to occur under the proposed action. No known archaeological,

historic, or Native American ceremonial/traditional sites are expected within the site boundaries. In the event that cultural items are encountered during project activities, work would cease immediately and the Base Historic Preservation Officer (BHPO) would be contacted to assess the items.

The interior demolition of Building 30163 and the partial demolition of Building 30206 would be performed in a manner that would not jeopardize the historic integrity of the buildings. Character defining features of Building 30163 would need to be maintained during the demolition/renovation activities. These features are described in CRMP, Appendix K (WPAFB, 1999). The BHPO would coordinate the renovation of the interior of Building 30163 and the demolition of the vehicle bay at Building 30206 with the State Historic Preservation Office (SHPO).

There are no known archaeological resources at the buildings proposed for complete demolition. In the event that cultural items are encountered during demolition activities, work would cease immediately and the BHPO would be contacted to assess the items.

4.8 Air Quality

4.8.1 Alternative A: No Action

No impacts to air quality would occur under the No Action alternative. There would be no impact on the ability of the Dayton-Springfield area to retain its "Attainment" status. A conformity determination, in accordance with 40 CFR 93.153(c)(1), is not required because the total of direct and indirect emissions from Alternative A would likely be below the *de minimis* thresholds specified at 40 CFR 93.153(b)(1).

4.8.2 Alternative B: Construction of a New Fire Station (Proposed Action)

In the short-term, there would be minor, negative impacts to air quality. Impacts from site preparation, excavation, and construction of the new fire station include the generation of fugitive dust and particulates from the removal and grading of soil for the foundation and parking lot. In addition, there would be minor, short-term emissions from vehicles that would travel in the construction area.

During construction, dust suppression measures would be used to minimize fugitive dust emissions. To establish a basis for comparison of air quality impacts from the project

alternatives with respect to normal base operations, previous estimates of normal baseline particulate emissions were considered to be air emissions reported in WPAFB's Annual Emission Fee Report submitted to OEPA for 2002. Emission factors for fugitive emissions associated with heavy construction operations were obtained from Section 13.2.3 of AP-42, *Compilation of Air Pollutant Emission Factors, Volume I: Stationary Sources, Fifth Edition* (USEPA, 1995), based on 80 percent control efficiency for wet suppression (using engineering estimates). Because the building is still in the design phase, the area of the site to be excavated has not been finalized. The estimated area is expected to be between 28,000 sf and 35,725 sf. As a conservative measure, an area of 35,725 sf was assumed for the calculation.

For site preparation, excavation, and construction activities at the site of the new fire station, particulate matter (PM_{10}) emissions of 1.84 tons per year (tpy) were estimated based on assumptions that a total of 1.3 acres would be disturbed and the duration of the construction activities would be 6 months. This amount is approximately 10.5 percent of the estimated normal baseline (17.53 tpy) at WPAFB. Supporting data for these estimates are shown in Appendix D.

Alternative B would have a negligible impact on the ability of the Dayton-Springfield area to retain its "Attainment" status. A conformity determination, in accordance with 40 CFR 93.153(c)(1), is not required because the total of direct and indirect emissions from Alternative B would be below the thresholds specified for maintenance areas at 40 CFR 93.153(b)(1). The threshold specified for particulate matter (PM_{10}) is 100 tpy. The estimated PM_{10} from construction activities (1.84 tpy) are below the threshold.

There would be no long-term impacts due to fugitive dust because a majority of the area will be covered by the fire station or the parking lot. The remaining area would be vegetated.

Air quality impacts associated with demolition of buildings are detailed in the EIS for building demolition (USAF, 1997). Specifically, the demolition of the buildings associated with this project could potentially generate ozone-depleting substances (refrigerants from air conditioners), lead (LBP), asbestos-containing materials (ACM), and fugitive dusts from demolition activities and project-related vehicles. Impacts would be minimized by measures described in Section 4.8 of the EIS (USAF, 1997). In the short-term, there would be minor, negative impacts to air quality. There would be no long-term impacts due to fugitive dust because the sites would be re-vegetated.

4.9 Noise

4.9.1 Alternative A: No Action

There would be no impacts under the No Action alternative.

4.9.2 Alternative B: Construction of A New Fire Station

For persons at a distance of approximately 50 feet, minor (i.e., 0-10 dB increase over background noise) to moderate (i.e., 10-15 dB increase) impacts on ambient noise could result from construction activities involving heavy equipment such as trucks and bulldozers. Noise levels associated with common construction equipment are: bulldozers (79-91 dB at 50 ft), backhoes (73-94 dB at 50 ft), trucks (83-93 dB at 50 ft), front-end loader (75-79 dB at 50 ft), and roller or compactors (72-75 dB at 50 ft) (WPAFB, 1994c). There would be short-term minor impacts to occupants of buildings near the construction site. Increases in noise levels are expected to be intermittent while the proposed action is carried out.

Short-term adverse impacts could be experienced by construction crews. Noise levels would be more intense in the construction area. However, impacts would be minimized because workers would be responsible for adhering to health and safety regulations.

Due to the location of the new fire station along the flightline, occupants of the fire station could potentially be impacted by aircraft noise. These impacts would be minimized by designing the fire station to meet sound level attenuation requirements for buildings in Zone 6 (WPAFB, 2003e).

Impacts to noise during demolition activities are described in Section 4.9 of the EIS for building demolition (USAF, 1997). Impacts specific to the current fire stations are short-term minor impacts to individuals that occupy buildings in the vicinity of the demolition sites. Occupants of nearby buildings would be located at distances over 50 feet of the demolition sites. In addition, the buildings themselves offer a barrier to noise from the demolition site. Although Building 20090 is located in the vicinity of military housing, the residential area is located approximately 250 feet from the demolition site on the other side of a wooded area. Both the distance and the trees would reduce the noise experienced by residents. Because Building 20090 is an open-air picnic shelter, the timeframe for the demolition would be relatively short.

4.10 Health and Safety

4.10.1 Alternative A: No Action

Under the No Action alternative, potential hazards to health and safety posed by the current conditions at the fire stations would persist. Inefficient response to fires and crashes could result in health and safety risks to base personnel and flight crews as well as fire protection crew themselves. The likelihood or severity of accident or injury due to the deficiencies associated with the current stations cannot be quantified in this EA.

4.10.2 Alternative B: Construction of A New Fire Station

Because construction workers for the proposed fire station would be responsible for complying with standard operating procedures and applicable health and safety regulations (Table 1.4-1), no impacts to health and safety would be expected. In addition, “digging clearances” would be obtained from the Department of Civil Engineering and Base Utilities prior to excavating soil and installing utility lines.

As discussed in Section 4.4.2, the proposed construction site is located within the boundary of OU10. An IRP site, ERTR, is located within the area designated for construction. The UST at this site was removed and no additional action is warranted. Therefore, no impacts to human health and safety would be expected (WPAFB, 2003b).

Impacts to health and safety of nearby personnel would be minimized by clearly identifying the construction zone and prohibiting access to unauthorized individuals. Furthermore, a lock out/tag out procedure would be used when working with active electrical lines. Construction sites would have utility line trenches marked and warning signs would be used during construction activities. Use of cranes and other high-profile equipment would require a “spotter” when operating near any overhead hazards.

Use of the completed fire station would result in positive impacts on the health and safety of the base personnel, flight crews, and fire protection personnel due to more efficient operations and improved response times.

The proposed location for the new fire station is outside of current Explosive Safety Zones for the flightline (WPAFB, 2003h). Adherence to AFMAN 91-201 precludes many explosives-related activities in the vicinity of this location in the future. According to AFMAN 91-201

paragraph 3.25, however, Combat Aircraft loaded with Quantity Distance exempt explosive devices can be parked on any parking spot near the proposed fire station.

Because the base fire department must not be considered “related” to any explosion sites, the proposed location would impact the ability of WPAFB to handle and/or generate combat aircraft on the flightline. Alternative B would reduce future mission capability and flexibility regarding fighter aircraft generation and handling because the required separation distances cover large portions of the existing parking ramp (WPAFB, 2003h).

Impacts to health and safety associated with building demolition projects are presented in Section 4.3 of the EIS for building demolition (USAF, 1997). Because demolition crews would be responsible for adhering to standard operating procedures and applicable health and safety regulations, no impacts to worker safety would be expected. In addition, there would be no impacts due to hazardous materials identified at the current fire stations because it is base policy to identify and remove hazardous materials from buildings prior to demolition (USAF, 1997).

Utilities at the demolition sites would be permanently disconnected and locked out at the source prior to removal activities at the buildings. If utility lines leading to the buildings are removed, all trenches would have barricades and warning signs in place. Other applicable procedures presented above must also be used during demolition activities.

4.11 Socioeconomics

4.11.1 Alternative A: No Action

The No Action alternative would have no effect on socioeconomics.

4.11.2 Alternative B: Construction of A New Fire Station

Nominal, temporary socioeconomic impacts could occur during construction and demolition activities. Although there would be no significant impact on the overall economic activities surrounding the base, there would be a short-term beneficial impact on the local economy. Contractors and local businesses would benefit from employment and income through contracts associated with the proposed task.

Nominal, beneficial long-term impacts could occur for the base because of increased efficiency and reduction of overtime hours.

4.12 Transportation/Traffic

4.12.1 Alternative A: No Action

The No Action alternative would have no effect on transportation/traffic.

4.12.2 Alternative B: Construction of A New Fire Station

There would be a short-term impact to traffic circulation due to project-related vehicles using primary and secondary arterial roadways to the designated sites (Skeel Avenue). During demolition activities, there would be a short-term impact to traffic circulation due to project-related vehicles using primary and secondary arterial roadways to the designated sites. No long-term impacts to traffic would be expected.

The intersection at Allbrook Road and Skeel Avenue may have to be realigned to accommodate the turning radius of the large fire department vehicles. Potential re-alignment of the intersection would be addressed during the design phase of the project. Per the Ohio Manual of Uniform Traffic Control Devices, Part 2, Regulatory Series, Advanced Crossing Sign, paragraph 2N-40, sign number W-92 (Fire Station), a road sign would need to be posted to indicate the point at which emergency vehicles may enter or exit onto Skeel Avenue from the new facility (WPAFB, 2003g). A nominal increase in traffic circulation along Skeel Avenue would be expected from the change in the emergency response route of the fire trucks. There would be no need to change the current speed limit (WPAFB, 2003g).

4.13 Utilities

4.13.1 Alternative A: No Action

The No Action alternative would have no effect on utilities.

4.13.2 Alternative B: Construction of A New Fire Station

Impacts would be minimized by following the procedures specified for “digging clearances” (Section 3.13). Underground utilities (e.g., electric) in areas to be excavated would be marked by each division of base utilities. Proper excavation techniques would be used to ensure that underground utilities lines are not cut. Although the base has maps that describe the location of the utilities, there would be a potential for unmarked utilities. In the event a utility line is cut, on-site personnel would need to implement emergency procedures.

Procedures used to protect the utilities would be similar to those used to protect health and safety. When working with active electrical lines, a lock out/tag out procedure would be used. Use of cranes and other high-profile equipment would require a “spotter” when operating near any overhead lines. Construction sites would have utility line trenches marked and warning signs would be used during construction activities.

Utilities at the demolition sites would be permanently disconnected and locked out at the source prior to removal activities at the buildings. If utility lines leading to the buildings are removed, all trenches would have barricades and warning signs in place. Other applicable procedures presented above must also be used during demolition activities.

4.14 Cumulative Impacts

Cumulative effects are those which may result from the incremental impact of the federal action (construction of a new fire station) when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions (See 40 CFR § 1508.7).

No other actions are known to be occurring during the timeframe of the construction of the new fire station on Skeel Avenue. Road work (e.g., routine resurfacing/restriping) would be scheduled to ensure no conflict with construction of the fire station (WPAFB, 2003c). Therefore, cumulative impacts would not be expected.

4.15 Unavoidable Adverse Effects

If the proposed action were implemented, there would be a commitment of soil that is excavated as part of the site preparation/construction work and a commitment of soil and vegetation that is excavated if soil remediation is necessary. Impacts to vegetation would be minor because the species types are common to the base (i.e., ordinary vegetation) and the areas excavated would be re-seeded/landscaped. Minor impacts from noise would slightly affect passers-by and nearby workers. The increase in noise would be primarily due to construction/excavation equipment. The noise would only exist during working hours and would end at the completion of the operation. Negligible increases in traffic would occur during the proposed action and once the fire station becomes operational.

4.16 Relationship of Short-Term Uses and Long-Term Productivity

Currently, Fire Department activities in Area C are fragmented in a variety of buildings on base. By constructing the new fire station and consolidating Fire Department activities into a central location, crash response time for incidents on the south end of the active runway would be improved, fire protection manpower requirements would be reduced, and excessive overtime would be eliminated. Construction and subsequent use of this facility would also allow for accommodation of larger vehicles and onsite classroom training. Additional "Quality of Life" deficiencies would also be improved such as inadequate storage space (medical and general), no on-site laundry facilities, substandard sleeping, dining, and day room areas, and an inadequate ventilation system.

Adherence to AFMAN 91-201 precludes explosives-related activities in the vicinity of the base fire department in the future. Its proposed location would have long-term impacts on the ability of WPAFB to accept combat aircraft on the flightline. Tactical weapons and other explosives could not be handled and processed effectively and efficiently due to the required separation distances between explosive operations and the facility (WPAFB, 2003h).

4.17 Irreversible and Irretrievable Commitments of Resources

CEQ regulations in 40 CFR 1502.16 require that an agency identify any irreversible or irretrievable commitments of resources that would be involved in the proposed action, should it be implemented. Capital, energy, materials, and labor would be required for the action. These resources are not retrievable.

5.0 List of Preparers and Contributors

The following individuals assisted in the preparation of or provided background information for this EA.

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The following agencies and persons have been consulted during the preparation of this EA.

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A Member of The IT Group

May 30, 2003

Heritage Data Services
Division of Natural Areas and Preserves
Ohio Department of Natural Resources
Fountain Square, Building F
Columbus, Ohio 43224

Request for Data for Proposed Project at Allbrook Drive and Skeel Avenue, Area C
Wright-Patterson Air Force Base, Ohio

Dear Mr. Grieszmer:

The purpose of this letter is to request information from the Natural Heritage Program for State and Federally-listed threatened or endangered plants and animals in the vicinity of Allbrook Drive and Skeel Avenue at Wright-Patterson Air Force Base (WPAFB). Under contract to WPAFB, we are currently preparing an environmental assessment (EA) to address potential impacts associated with the construction of a new Fire Station. The new station is needed to 1) consolidate functions currently split between Fire Station #1 and Fire Station #2, (2) improve flightline response times and manpower efficiency, and (3) house new larger vehicles. In addition to the construction of the new fire station, impacts associated with the demolition of interior space of four existing facilities will be addressed. The intent of the EA is to satisfy requirements under the National Environmental Policy Act (NEPA) of 1969.

The geographic location of the proposed construction site is Greene County, R.8, T.3 and is depicted in Figures 1 and 2. The proposed location of the new Fire Station is at the northwest corner of the intersection of Allbrook Drive and Skeel Avenue in Area C. The site is adjacent to flightline Gate 3F. WPAFB has maintained the proposed location as "Improved Grounds" (i.e., lawn/landscaped area). There are no natural resources (i.e., woodland, prairie, wetlands, and ponds) in the vicinity of the proposed construction site.

The new Fire Station would consist of approximately 35,700 square feet with a reinforced concrete foundation and floor slab, masonry walls, and roof. The facility would include an apparatus room with 14 stalls, a communications room, classrooms, administrative offices, sleeping quarters, a dining area, a recreation area, support areas, and parking for 50 vehicles. Activities associated with construction would include site preparation, construction of the Fire Station and associated parking lots, and landscaping.

A form for a Data Request has been attached. We would appreciate any information from your database that applies to our project area. Please expedite our request, if possible, and contact me at 513/782-4967 if you have any questions or require further information. Thank you for your attention to this request.

Sincerely,

IT Corporation

A handwritten signature in cursive script that reads 'Cynthia A. Hassan'.

Cynthia A. Hassan
Project Manager

cc: T. Perdue (88 ABW/EMO, WPAFB)

DATA REQUEST
OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF NATURAL AREAS AND PRESERVES
HERITAGE DATA SERVICES
1889 FOUNTAIN SQUARE COURT, BUILDING F-1
COLUMBUS, OHIO 43224
PHONE: 614-265-6453; FAX: 614-267-3096

INSTRUCTIONS:

Print this form from your browser. Then fill out both pages, sign it and return it to the address or fax number listed above along with: (1) a letter formally requesting data and describing your project, and (2) a map detailing the boundaries of your study area. A photocopy from the pertinent portion of a USGS 7.5 minute topographic map is preferred but other maps are acceptable. Our turnaround time is two weeks, although we can often respond more quickly.

FEES:

Fees are determined by the amount of time it takes to complete your project. The charge is \$25.00 per 1/2 hour with a 1/2 hour minimum. We can perform a data search manually or by computer. The Heritage Data Services staff will determine the most cost-efficient method of doing your search. A cost estimate can be provided upon request. Unless otherwise specified, an invoice will accompany the data services response.

This request is being submitted by: __fax__ Xmail __both

Date: 5/30/03

Your Agency/Organization: Shaw Environmental and Infrastructure, Inc. (formerly IT Corporation)

Your Name/Title: Cynthia A. Hassan, Project Manager

Address: 11499 Chester Road

City/State/Zip: Cincinnati, OH 45246-4012

Phone/Fax: 513/782-4967 Fax: 513/782-4807

Project Name/Number: Environmental Assessment (EA) for Construction of a new Fire Station, Wright-Patterson Air Force Base, Ohio

Project is located on the following USGS 7.5 minute topographic map(s):

Fairborn Quad, R.8, T.3

If there is a program or contracting agency requiring this information, please give the name and phone number of a contact person:

Thomas Perdue, 88 ABW/EMO, WPAFB 937/257-5535, ext. 257

The Natural Heritage Data Base contains records for the categories of species and features listed below. Check the appropriate item/s to indicate your selection.

PLANTS: ☐ Federal Status Only ANIMALS: ☐ Federal Status Only
 ☐ State Legal Status Only ☐ State Legal Status Only
 ☐ Rare (non-legal status) ☐ Rare (non-legal status)
 ☒ All of the above ☒ All of the above

PLANT COMMUNITIES: ☒ All
 ☐ Wetlands Only
 ☐ Other _____

OTHER FEATURES: ☐ Geologic Features
 ☐ Breeding/Non-breeding Animal Concentrations
 ☐ Champion Trees
 ☐ State Nature Preserves and Natural Areas
 ☐ State Wild, Scenic and Recreational Rivers
 ☐ State Parks, Forests, Wildlife Areas
 ☒ All of the above
 ☐ Other _____

Besides name, location and status, specify any additional information you need:

_____ None. _____

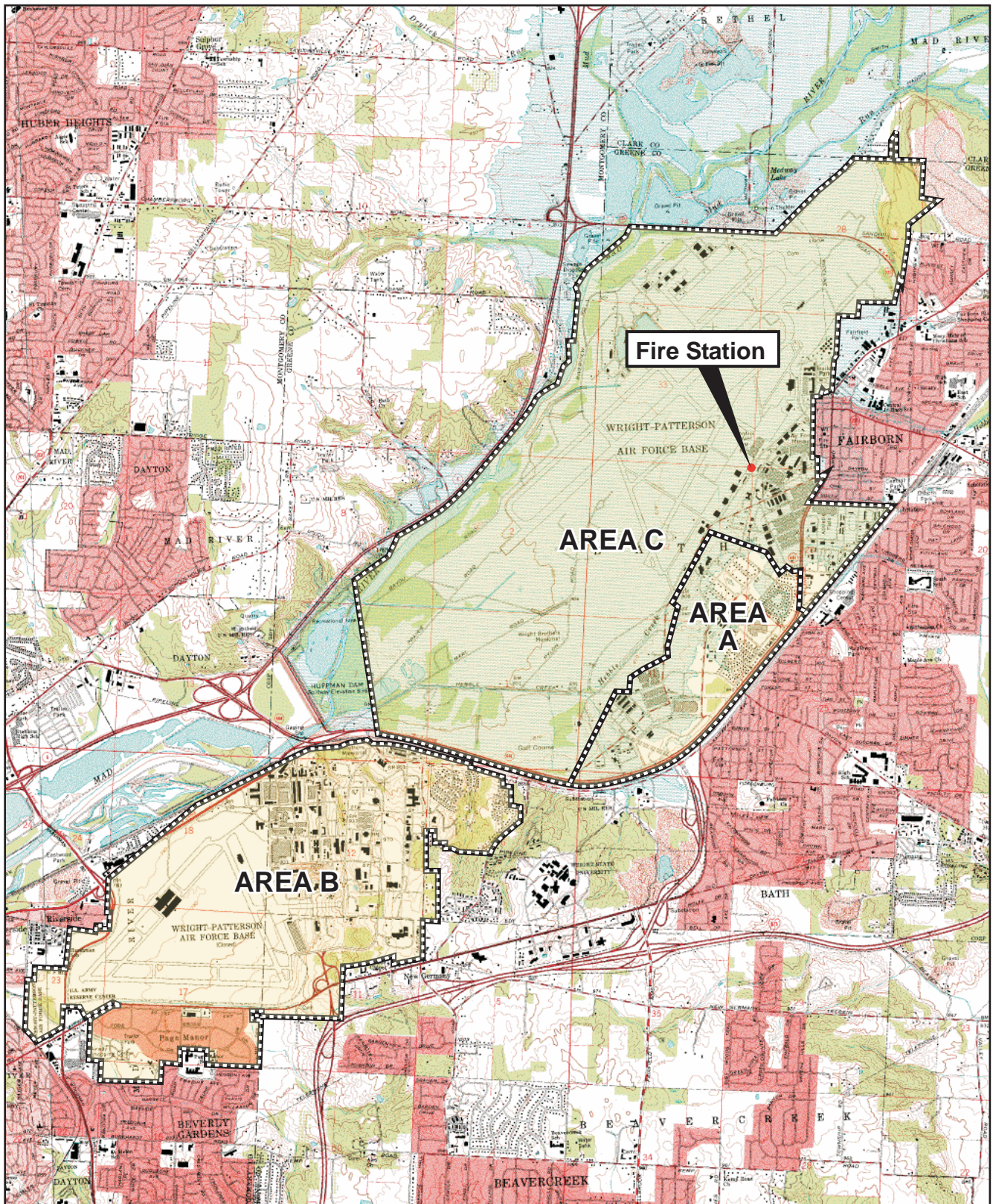
The area you want to search: ☐ study area as outlined on the map
 ☒ study area plus ½ mile radius
 ☐ study area plus 1 mile radius
 ☐ other _____

How will the information be used:

The name, status, and location of each species will be published in an EA that is being performed to satisfy requirements under the National Environmental Policy Act (NEPA.) _____

The information supplied above is complete and accurate. Any material supplied by the Natural Heritage Data Base will not be published without prior written permission and without crediting the Division of Natural Areas and Preserves as the source of the material.

Your Signature: _____ Cynthia A. Hansen _____



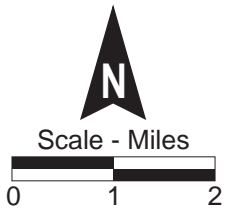
Fire Station

AREA C

AREA A

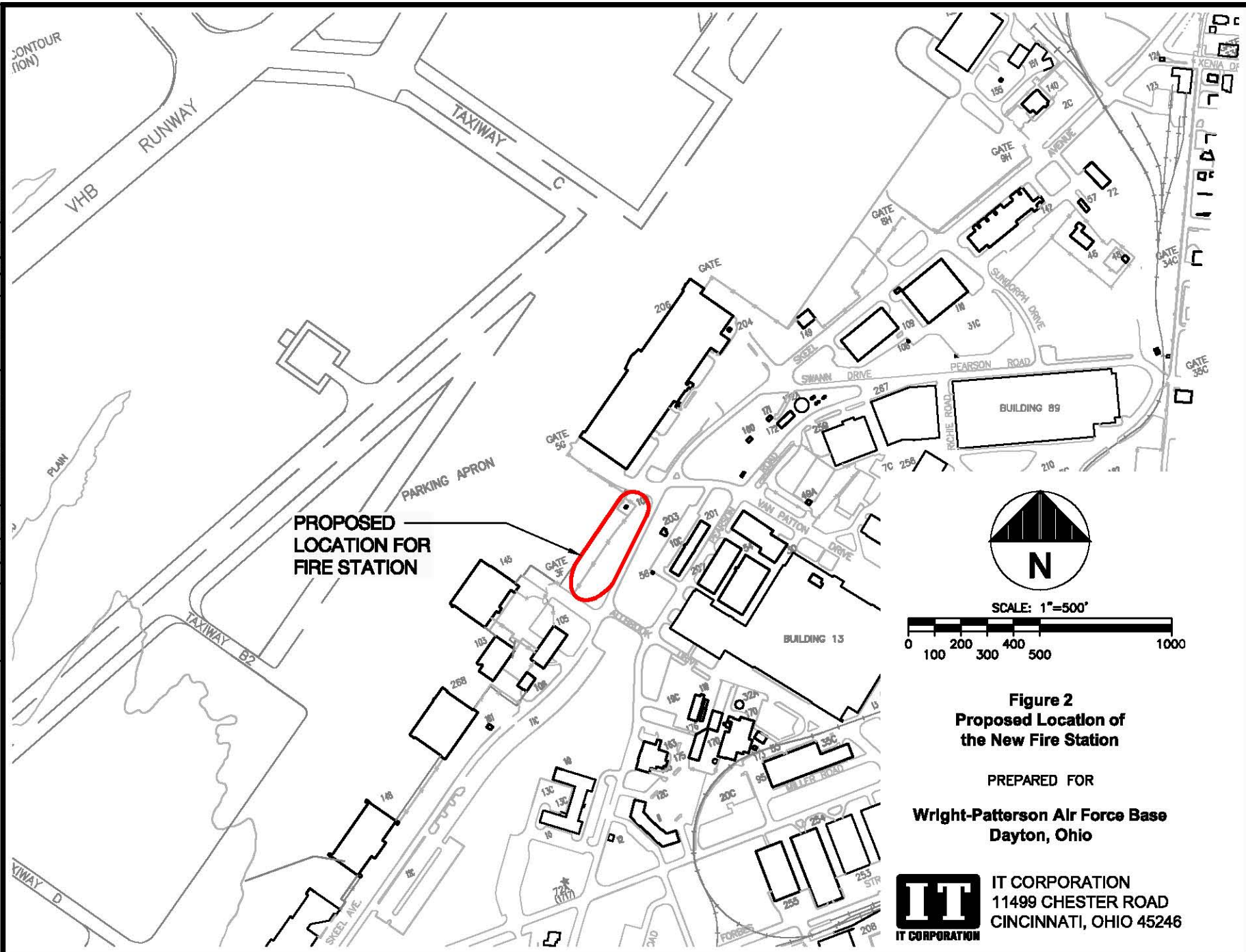
AREA B

Figure 1.
Proposed Location
of the New Fire Station.
Wright-Patterson Air Force Base
Dayton, Ohio



DRAWING NO.	K-843987-3000-4/03-W	
	4/17/03	4/17/03
CHECKED BY	CH	CH
APPROVED BY		
DRAWING BY	KMS	4/15/03

DRAWN BY	MSN	CHECKED BY	TC	5/2/03	DRAWING NUMBER	2003 28-01.DWG
	4/15/03	APPROVED BY	CH	5/2/03		





Ohio Department of Natural Resources

BOB TAFT, GOVERNOR

SAMUEL W. SPECK, DIRECTOR

Division of Natural Areas & Preserves

Nancy Strayer, Acting Chief

1889 Fountain Square, Bldg. F-1

Columbus, OH 43224-1388

Phone: (614) 265-6453 Fax: (614) 267-3096

June 13 2003

Cynthia A. Hassan
Shaw Environmental and Infrastructure, Inc.
11499 Chester Rd.
Cincinnati, OH 45246-4012

Dear Ms. Hassan:

After reviewing our Natural Heritage maps and files, I find the Division of Natural Areas and Preserves has records of rare or endangered species within one half mile of the Shaw Environmental and Infrastructure, Inc. project for the Construction of a new Fire Station, Wright Patterson AFB Ohio. The site is located 0.6 mi. SW. of the junction of St.Rt. 235 and St. Rt. 444, Bath Twp., Greene Co., Fairborn Quadrangle. The map I have included with this letter displays the locations of these records and corresponds with the list below. Bob Fletcher of the Division of Wildlife should be consulted regarding possible impacts to rare animal species. He can be reached at (614) 265-6308.

<u>Scientific Name</u>	<u>Common Name</u>	<u>Status</u>
<i>Juglans cinerea</i>	Butternut	Potentially Threatened
<i>Bartramia longicauda</i>	Upland Sandpiper	Threatened
<i>Cistothorus platensis</i>	Sedge Wren	Special Concern
<i>Papaipema beeriana</i>	Beer's Noctuid	Endangered
<i>Carex mesochorea</i>	Midland Sedge	Threatened

There are no existing or proposed state nature preserves at the project site. We are also unaware of any unique ecological sites, geologic features, breeding or non-breeding animal concentrations, champion trees, state parks, state forests, scenic rivers, or wildlife areas within the project area.

Cynthia A. Hassan
June 13, 2003
Page 2

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although we inventory all types of plant communities, we only maintain records on the highest quality areas. Also we do not have data for all Ohio wetlands. The Division of Wildlife has a statewide wetland inventory that can give you additional data. Their phone number is (614) 265-6300. For National wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at (614) 265-6576. Aerial photos may be obtained from ODOT at (614) 275-1369. USGS maps can be requested directly from the U.S. Geological Survey at 1-888-275-8747.

Please contact me at (614) 265-6409 if I can be of further assistance.

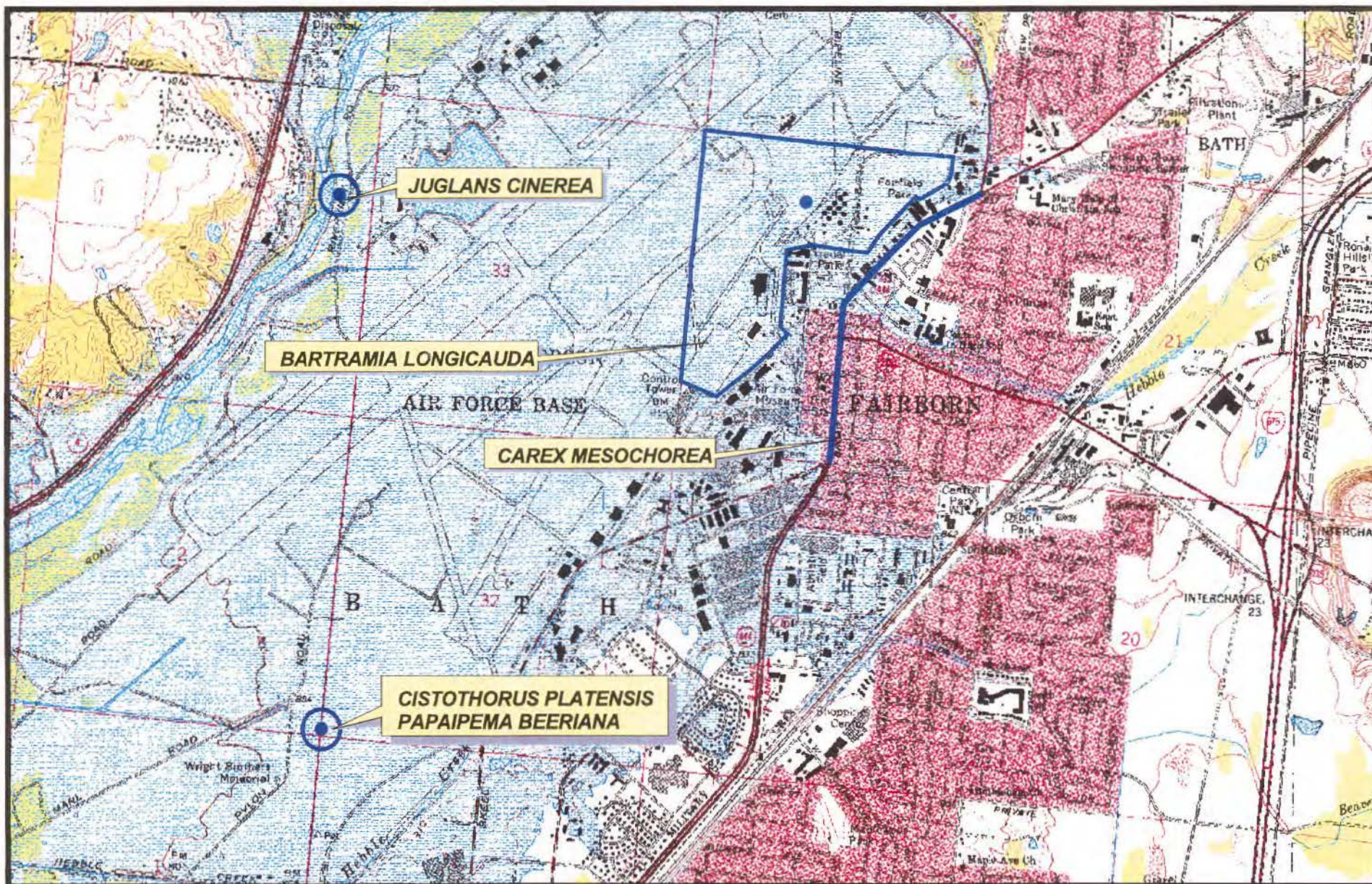
Sincerely,

A handwritten signature in black ink, appearing to read "Butch Grieszmer", with a stylized flourish at the end.

Butch Grieszmer, Ecological Analyst
Resource Services Group

Fairborn Quadrangle

June 12, 2003



Scale 1:24038



Ohio Division of
Natural Areas and Preserves

Appendix B
Correspondence with the
U.S. Fish & Wildlife Service



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE OHIO

88 ABW/EMO
5490 Pearson Road, Building 89
Wright-Patterson Air Force Base, OH 45433-5332

15 MAY 2003

Mr. Ken Lammers, Acting Director
U.S. Fish and Wildlife Service
Ecological Services
6950 Americana Parkway, Suite H
Reynoldsburg, Ohio 43068-4132

Dear Mr. Lammers:

The U.S. Air Force is seeking informal consultation with the U.S. Fish and Wildlife Service in compliance with Section 7 of the Endangered Species Act for the proposed construction of a new Fire Station. The new station is needed to 1) consolidate functions currently split between Fire Station #1 and Fire Station #2, (2) improve flightline response times and manpower efficiency, and (3) house new larger vehicles. In addition to the construction of the new fire station, impacts associated with the demolition of interior space of four existing facilities will be addressed. Wright-Patterson Air Force Base (WPAFB) has initiated an environmental assessment (EA) for this project in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969. The geographic location of the proposed construction site is Greene County, R.8, T.3 (see attached figures).

The new Fire Station would consist of approximately 35,700 square feet with a reinforced concrete foundation and floor slab, masonry walls and roof. The facility would include an apparatus room with 14 stalls, a communications room, classrooms, administrative offices, sleeping quarters, a dining area, a recreation area, support areas, and parking for 50 vehicles. Activities associated with construction would include site preparation, construction of the Fire Station and associated parking lots, and landscaping.

The proposed location of the new Fire Station is at the northwest corner of the intersection of Allbrook Drive and Skeel Avenue in Area C. The site is adjacent to flightline Gate 3F. This area is flat and grass-covered, and contains a few ordinary trees. WPAFB has maintained the proposed location as "Improved Grounds" (i.e., lawn/landscaped area). There are no natural resources (i.e., woodland, prairie, wetlands, and ponds) in the vicinity of the proposed construction site.

I am requesting comment from your agency regarding the presence or absence of federal- and state-listed species that may be located within 0.5 miles of the proposed project location. Threatened and endangered species known to exist within the vicinity of the base include the Indiana bat (*Myotis sodalis*), bald eagle (*Haliaeetus leucocephalus*), eastern massasauga

rattlesnake (*Sistrurus c. catenatus*), clubshell (*Pleurobema clava*, a mussel), and blazing star stem borer (*Papaipema beeriana*, a moth).

In addition, please comment on the presence or absence of areas of ecological concern including wetlands, national wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries that may be located within the areas likely to be disturbed by the project. The attached maps (see Figures 1 and 2) depict the locations of the proposed project areas. We have also contacted the ODNR's Division of Natural Areas and Preserves for a search of their Natural Heritage Database.

Please return your comments to me at the address located on the letterhead. If you have any questions, please call me at 937-257-5535 ext. 257. Thank you in advance for your time.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas Perdue". The signature is written in dark ink and is positioned above the printed name and title.

Thomas Perdue
EIAP Program Manager
Operations Branch
Office of Environmental Management

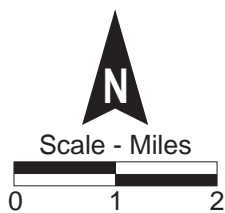
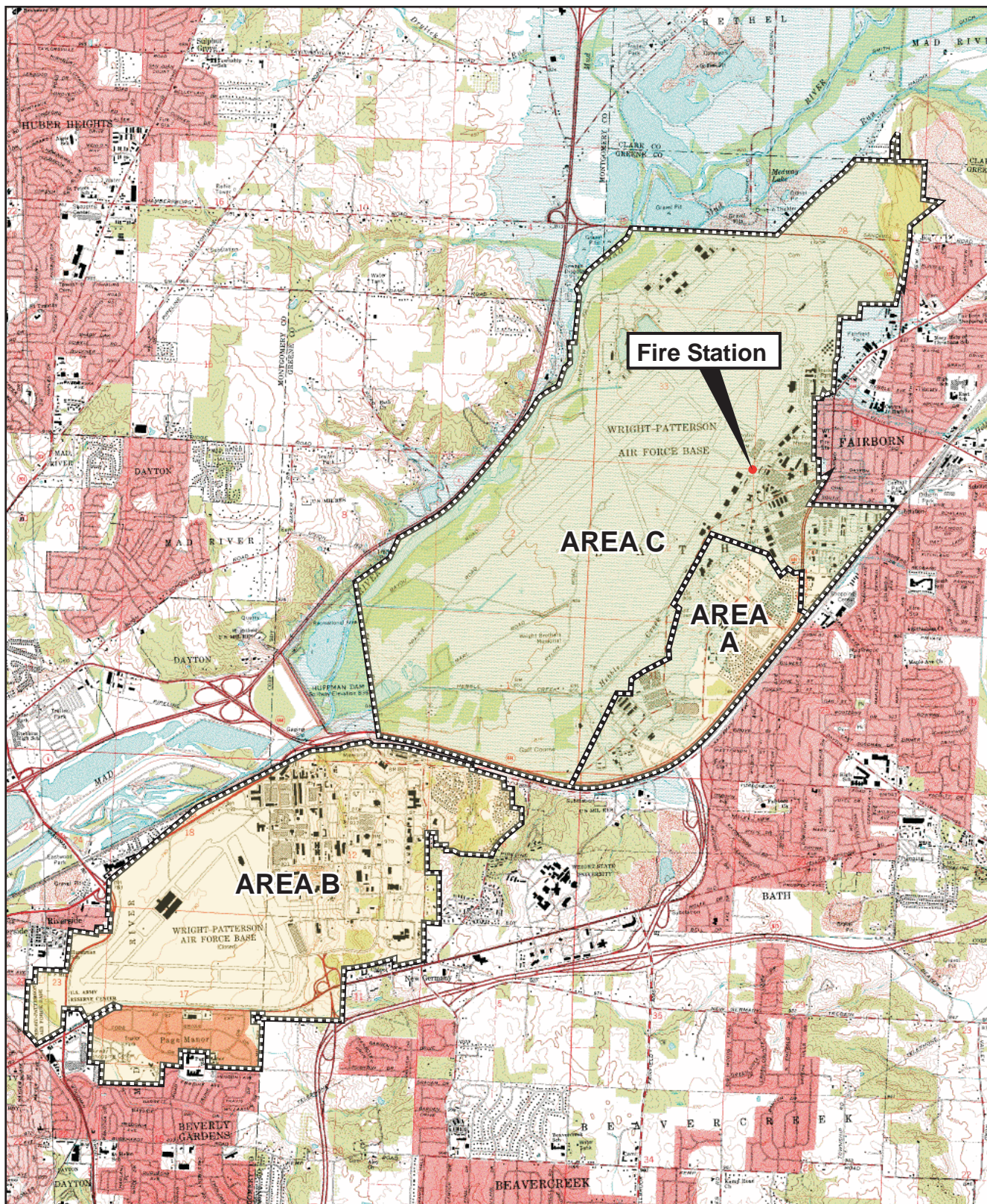
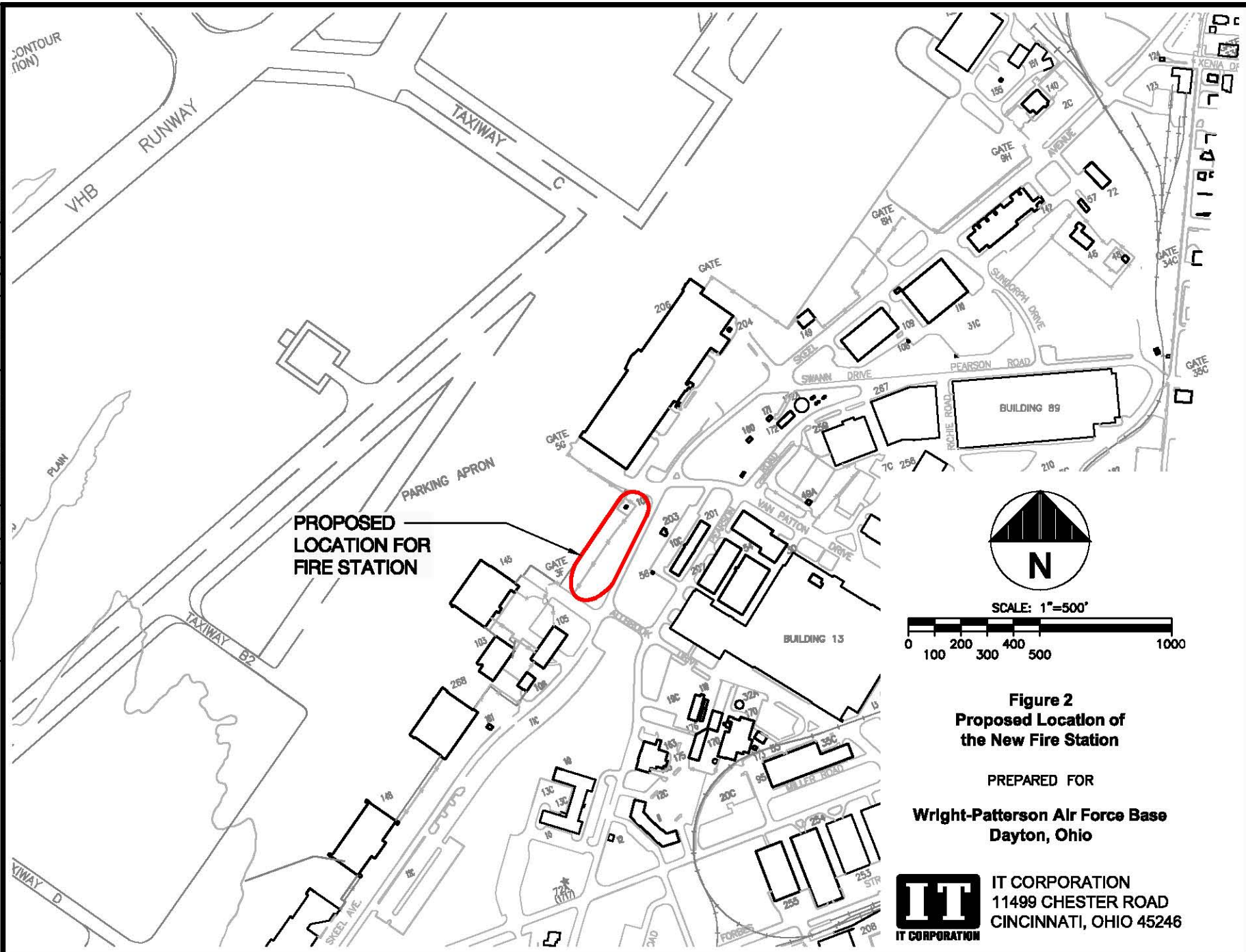


Figure 1.
Proposed Location
of the New Fire Station.
Wright-Patterson Air Force Base
Dayton, Ohio

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	CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY
	APPROVED BY	APPROVED BY	APPROVED BY	APPROVED BY
	KMS	KMS	KMS	KMS
	4/15/03	4/15/03	4/15/03	4/15/03
	DRAWING BY	DRAWING BY	DRAWING BY	DRAWING BY

DRAWN BY	MSN	CHECKED BY	TC	5/2/03	DRAWING NUMBER	2003 28-01.DWG
	4/15/03	APPROVED BY	CH	5/2/03		





United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
6950 Americana Parkway, Suite H
Reynoldsburg, Ohio 43068-4127

(614) 469-6923/FAX (614) 469-6919

September 4, 2003

11-09-03A03:44 RCVD

Thomas J. Perdue
Office of Environmental Management
Department of the Air Force
Wright-Patterson AFB, OH 45433

Dear Mr. Perdue:

This is in response to your May 15, 2003 letter requesting informal consultation under section 7(a)(2) of the Endangered Species Act, as amended (ESA) for the proposed construction of a new fire station. The new station is needed to 1) consolidate functions currently split between Fire Station #1 and Fire Station #2, 2) improve flightline response times and manpower efficiency, and 3) house new larger vehicles. In addition you are assessing the impacts of demolition of interior space in existing facilities on the Wright-Patterson Air Force Base in Greene County, Ohio.

Based on our assessment, we do not have any objection to the above project. Updated information regarding Federally listed species in Greene County only include Indiana bat (*Myotis sodalis*), clubshell (*Pleurobema clava*), and the candidate species, eastern massasauga (*Sistrurus c. catenatus*). Due to the project type and location, the project, as proposed, will have no effect on these species. This precludes the need for further action on this project as required by the 1973 Endangered Species Act, as amended.

Should additional information on listed or proposed species or their Critical Habitat becomes available, or if new information reveals effects of the action that were not previously considered, this determination may be reconsidered. If project plans change, or if portions of the proposed project were not evaluated, we would recommend that you contact our office for further review.

Having stated the above, we wish to caution you that "ordinary trees" could include trees with Indiana bat characteristics. This species of bat is known to use any tree with the proper characteristics; it does not have to be a tree in a woodland. Accordingly, we are including our standard guidance for the Indiana bat.

The proposed project lies within the range of the **Indiana bat** (*Myotis sodalis*), a Federally listed endangered species. Summer habitat requirements for the species are not well defined, but the following comments are thought to be important:

1. Dead or live trees and snags with peeling or exfoliating bark, split tree trunk and/or branches, or cavities, which may be used as maternity roost areas.
2. Live trees (such as shagbark hickory) which have exfoliating bark.

2. Live trees (such as shagbark hickory) which have exfoliating bark.
3. Stream corridors, riparian areas, and upland woodlots which provide forage sites.


Should the proposed site contain trees with any of the characteristics listed above, we recommend that they and surrounding trees be saved wherever possible. If they must be cut, they should not be cut between April 15 and September 15.

If desirable trees are present and if the above time restriction is unacceptable, mist net or other surveys should be conducted to determine if bats are present. The survey should be designed and conducted in coordination with the Endangered Species Coordinator for this office. The survey should be conducted in June or July, since the bats would only be expected in the project area from approximately April 15 to September 15.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the Endangered Species Act of 1973, as amended, and are consistent with the intent of the National Environmental Policy Act of 1969 and the U. S. Fish and Wildlife Service's Mitigation Policy.

If you have questions, or if we may be of further assistance in this matter, please contact Ken Lammers at Extension 15 in this office.

Sincerely,


Mary M. Knapp, Ph.D.
Supervisor

cc: ODNR, Div. of Wildlife, SCEA Unit, Columbus, OH

Appendix C
Correspondence with the
Miami Conservancy District



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 88TH AIR BASE WING (AFMC)
WRIGHT-PATTERSON AIR FORCE BASE OHIO

88 ABW/EMO
5490 Pearson Road, Building 89
Wright-Patterson Air Force Base, OH 45433-5332

25 JUN 2003

Miami Conservancy District
38 E. Monument Avenue
Dayton, OH 45402-1210

Dear Sir/Madam:

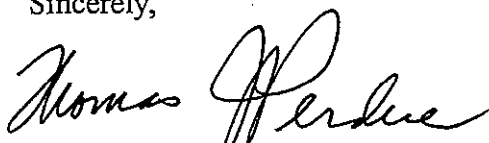
In accordance with the Miami Conservancy District's (MCD) Building Restriction Policy, the U.S. Air Force is providing notification to the MCD with respect to the proposed construction of a new fire station at Wright-Patterson Air Force Base (WPAFB). The policy states that structures or additions of any type within the floodplain behind Huffman Dam shall not be erected more than 5 feet below the Huffman Dam spillway elevation (835 ft MSL) except by authorization from the MCD.

The new fire station will be located at the intersection of Allbrook and Skeel Avenues in Area C and will be for combined use for flightline and basewide emergency response. The geographic location of the new fire station is Greene County, R.8 north, T.2 east, Section 32, and is depicted in Figures 1 and 2 (attached). This location is at an elevation of 816.3 feet MSL and is just above the 100-year floodplain of the Mad River at Huffman Dam of 814.3 feet above mean sea level (MSL) as established by the U.S. Army Corps of Engineers for WPAFB in 1994. This elevation is, however, below the required MCD notification elevation of 830 ft, MSL. The surface area covered by the new building will be approximately 0.82 acres.

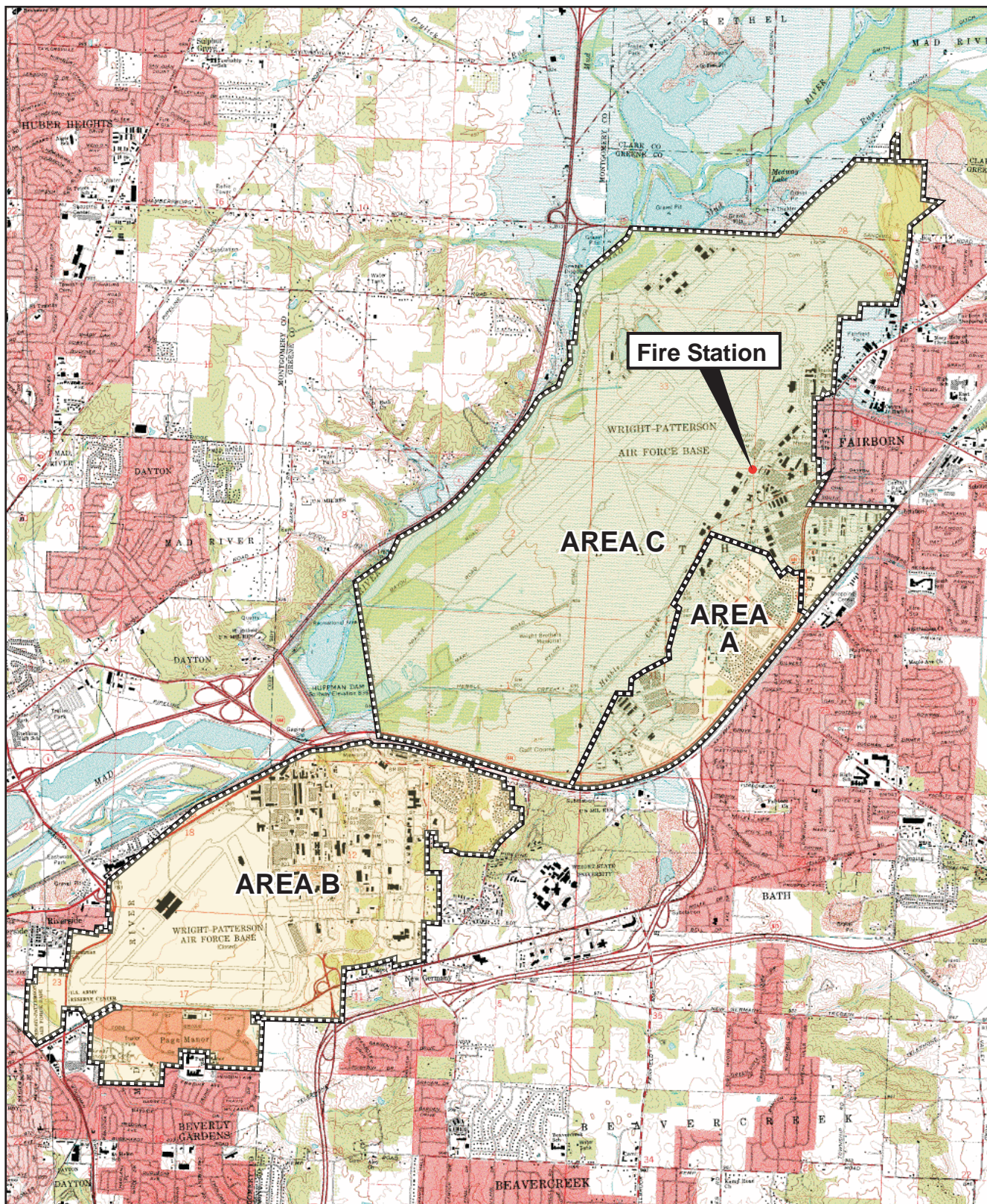
In conjunction with the construction of the new fire station, several structures are proposed for demolition. The existing flightline fire station (vehicle bay in Building 30206) is to be demolished. The existing flightline fire station is located approximately 1,200 feet north of the new facility site and is at the same elevation. The surface area of the existing station is approximately 0.1 acres. A small office building (Building 30201) is also to be demolished. This building is located 300 feet east of the new facility site at an elevation of approximately 830 feet MSL. The surface area of the existing office building is approximately 0.2 acres. Two additional buildings that are proposed for demolition are located at or above the 835 feet MSL elevation. It is not anticipated that construction of the new fire station would impact floodplain management.

WPAFB has initiated an environmental assessment (EA) for the project in accordance with the requirements of the National Environmental Policy Act of 1969. We would appreciate your input regarding the level of significance that the proposed project would have on the MCD. If you need more information or have comments on the proposed plan, please contact me at (937) 257-5535, ext. 257.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas Perdue".

Thomas Perdue
EIAP Program Manager
Operations Branch
Office of Environmental Management



DRAWING NO.	4/17/03	4/17/03	4/17/03
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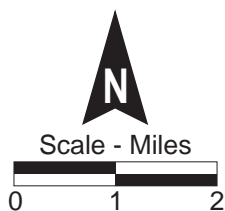
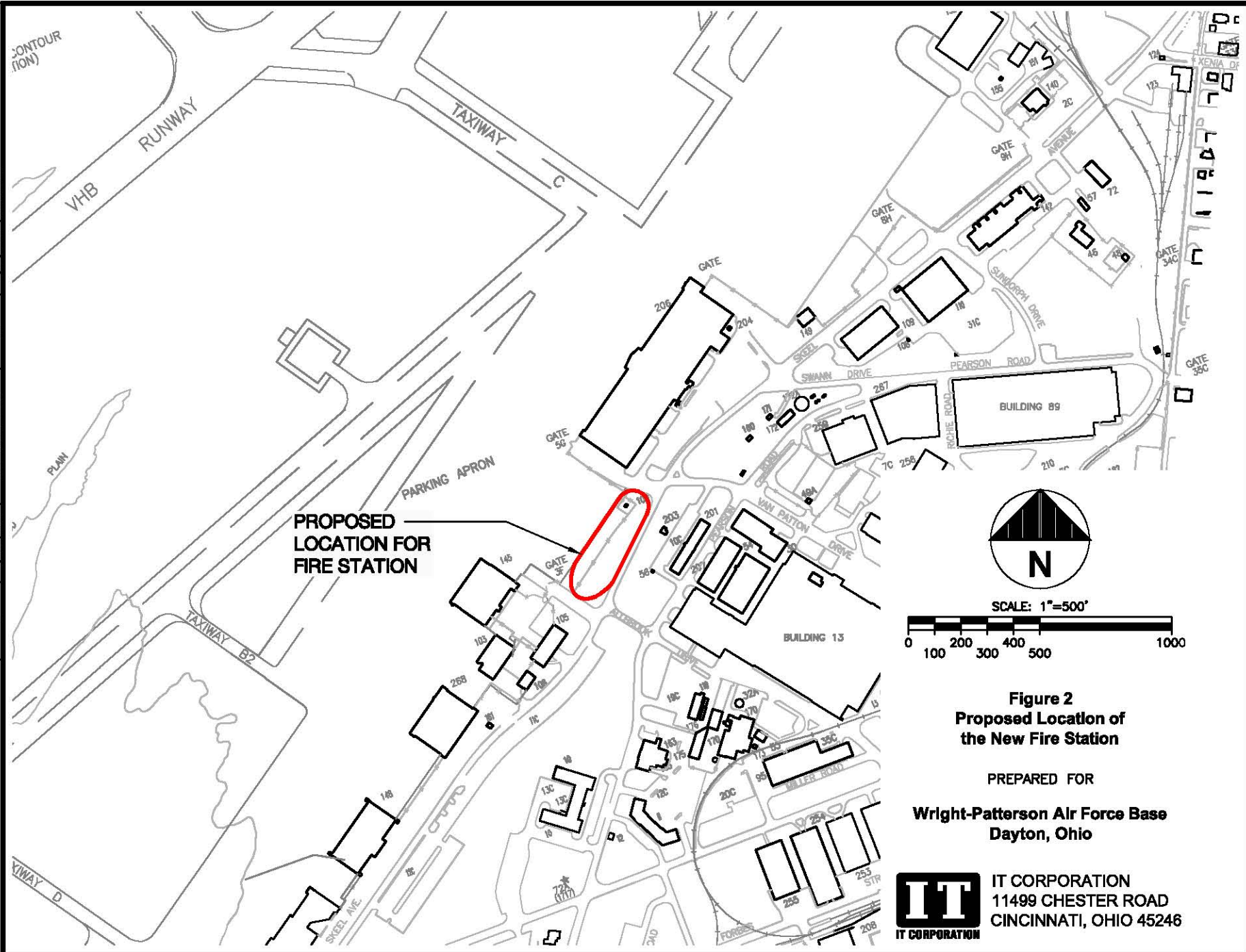


Figure 1.
Proposed Location
of the New Fire Station.
Wright-Patterson Air Force Base
Dayton, Ohio

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	4/15/03	APPROVED BY	CH		





MIAMI
CONSERVANCY
DISTRICT

BOARD OF DIRECTORS
William H. Hobart
Gayle B. Price, Jr.
Thomas B. Rentschler
GENERAL MANAGER
Janet M. Bly

July 18, 2003

Mr. Thomas Perdue
88 ABW/EMO
5490 Pearson Road, Building 89
Wright-Patterson Air Force Base, Ohio 45433-5332

Re: Huffman Retarding Basin, WPAFB, Proposed Fire Station, MCD Parcel No. 3211

Dear Mr. Perdue:

The Miami Conservancy District has reviewed your letter regarding construction of the proposed Fire Station. The proposed Fire Station, as shown on the attached map (Elevation 816.3), is located below the minimum building elevation of 830.0 within the Huffman Retarding Basin.

In accordance with those rights (MCD Parcel No. 3211) retained by the Miami Conservancy District in MCD Sale No. 258, as recorded in Greene County Deed Book 129, Page 146 on December 5, 1922, the construction of any habitable structures within Area No. 1, below the minimum building elevation of 830.0, would be prohibited.

The above-referenced restrictions would prohibit construction of the proposed Fire Station as located. However, as the existing building is located at the same elevation, the Miami Conservancy District will not object to construction of the proposed Fire Station subject to the immediate removal of all existing buildings as referenced within your letter (copy enclosed).

If you have any further questions or need additional information please contact me at (937) 223-1278, Ext. 3219.

Very truly yours,

Richard L. Doran
Property Administrator

Enclosure

cc: Bill Bogan
File: WPAFB

Appendix D
Emissions Estimates for the
Construction of a New Fire Station

**Construction of New Fire Station
PM₁₀ Emissions Estimate**

Construction Emissions

Area Description	Area		Project Duration	Emission Factor	Control Efficiency	Estimated Emissions
	A		T	EM _{FAC}	CE	E _{TON}
	A = L * W		†2	†3	†4	E _{TON} = A * T * EM _{FAC}
	(ft. ²)†1	(acre)	(months)	(ton/acre/month)	(%)	(ton)
New Fire Station Building	35,725.	0.82	6	1.2	80%	1.18
Parking Lot for 50 Cars + Fire Vehicles	20,000.	0.46	6	1.2	80%	0.66
Total	1.28					1.84

Normal Base-wide Emissions	Variable Description
E _{NORM}	Symbol
†5	Footnote
PM ₁₀ (ton/yr.)	Units
	Values
	Values
17.53	Values

Conclusions:

Based upon previous estimates of basewide particulate emissions, as referenced, and the conservative emissions estimate provided here, the proposed project is expected to have only short-term negligible impacts on air quality.

LEGEND

- †1 Note: Area of building may be between 28,000 sq. ft and 35,725 sq. ft. (Mr. Mike Howe, 88 ABW/CECP). The worst case higher value was used for estimating emissions. The estimated area for the parking lot was provided by Mr. Mike Howe, 88 ABW/CECP.
- †2 Note: Estimated project duration = 6 months.
- †3 Note: Emission factor Section 13.2.3 "Heavy Construction Operations" (dated 1/95), of AP-42, "Compilation of Air Pollutant Emission Factors", 5th Edition, U.S. EPA, Research Triangle Park, NC, 1998.
- †4 Note: Table 2.1.1-3 - "Summary of Techniques, Efficiencies, and Costs for Controlling Fugitive Dust from Paved and Unpaved Surfaces," Fugitive Dust Control Technology, Orlemann (1993).
Control efficiency for watering of paved surfaces.
- †5 Note: Particulate emissions from WPAFB Fee Emission Report for 2002.

FINAL
FINDING OF NO SIGNIFICANT IMPACT

Name of Action: Construction of a New Fire Station, Wright-Patterson Air Force Base (WPAFB), Ohio

Currently, Fire Department activities in Area C are fragmented into two buildings, which severely degrades response capabilities. A new fire station has been proposed to consolidate functions split between Fire Station 1 (Building 30163) and Fire Station 2 (Building 30206) and to improve crash response time for incidents on the south end of the runway. Consolidation of activities into one building would also reduce manpower requirements, eliminate excessive overtime, and improve quality of life deficiencies (e.g., sleeping areas). The fire station would be located in Area C, at the intersection of Allbrook Drive and Skeel Avenue.

Proposed Action and Alternative:

The proposed action is to construct a new consolidated fire station and conduct the interior demolition/renovation of one building and the partial/complete demolition of four other buildings on the base. The demolition of four buildings is included as part of this action to offset the square footage to be gained from the construction of the new fire station. There were two alternatives analyzed:

Alternative A, the No Action alternative, would have Fire Department activities remain split between Fire Stations 1 and 2. Alternative A also serves as a baseline against which the Proposed Action can be compared.

Alternative B, the Proposed Action, includes the construction of the new consolidated fire station and the interior demolition/renovation of one building (Building 30163) and the partial/complete demolition of four other buildings (Buildings 30206, 30201, 20090, 11405) on the base.

Environmental Consequences:

The impacts associated with demolition actions at the five buildings are tiered from the *Final Environmental Impact Statement for the Demolition of Multiple Historic Facilities at Wright-Patterson Air Force Base, Ohio* (U.S. Air Force, 1997). The environmental consequences of the Proposed Action to construct the new fire station are as follows:

Biological Resources: Under Alternative B, there would be minor, short-term impacts to vegetation during site preparation/excavation, and construction activities at the proposed site and during demolition activities at three of the proposed buildings for demolition. Impacts to vegetation would be minimized because disturbed areas would be re-vegetated and landscaped after project activities.

Water Resources: Under Alternative B, minimal, short-term impacts to surface water would potentially occur due to surface water runoff during construction and demolition activities. Impacts would be minimized because erosion and siltation controls would be implemented.

Soils: Under Alternative B, there would be potential minor impacts (i.e., soil erosion) during construction and demolition activities. Impacts would be minimized because erosion and siltation controls would be implemented.

Cultural Resources: Under Alternative B, there would be no impacts due to construction of the new fire station. Potential impacts would occur, however, during demolition/renovation activities at Building 30163 and demolition activities at Building 30206. Impacts would be minimized through consultation with the BHPO.

Air Quality: Under Alternative B, there would be nominal short-term impacts upon air quality during the construction and demolition activities from particulate matter and engine exhaust emissions. Impacts would be minimized by the use of dust suppression measures.

Noise: Under Alternative B, there would be short-term minor impacts due to heavy equipment used during construction and demolition activities. Increases in noise levels are expected to be intermittent while the proposed action is carried out. There would be potential long-term impacts to occupants of the new fire station due to noise from aircraft along the flightline. Impacts would be minimized because living quarters would be designed to meet requirements for sound level attenuation.

Health and Safety: Under Alternative A, there would be potential impacts due to reduced response times to fires and crashes. Under Alternative B, there would be potential impacts to project workers due to accidents during construction activities. Impacts would be negligible because adherence to health and safety regulations would minimize hazards. Long-term beneficial impacts would occur due to improved operations and response times for fires and crashes. There would be minimal impacts to the facility or personnel due to explosives-related activities on the flightline near the facility. Adherence to AFMAN 91-201 would preclude the handling or processing of explosives within required separation distances. According to AFMAN 91-201 paragraph 3.25, however, Combat Aircraft loaded with Quantity Distance exempt explosive devices can be parked on any parking spot near the proposed fire station.

Because the base fire department must not be considered “related” to any explosion sites, the proposed location would impact the ability of WPAFB to handle and/or generate combat aircraft on the flightline. Alternative B would reduce future mission capability and flexibility regarding fighter aircraft generation and handling because the required separation distances cover large portions of the existing parking ramp.

Socioeconomics: Under Alternative B, there would be nominal, beneficial impact to the local economy during construction. Nominal, beneficial long-term impacts could occur for the base by eliminating the need for overtime hours.

Transportation/Traffic: Under Alternative B, there would be short-term impacts to traffic circulation during project activities. Once activities are completed, a nominal increase in traffic circulation in the vicinity of the new fire station would be expected.

Utilities: Under Alternative B, there would be potential impacts to utility lines during excavation, construction, and demolition activities. Impacts would be minimized because proper clearance procedures would be followed.

Regulatory Requirements:

Under 40 CFR 122.26, permits would be required for discharges into storm sewers and/or for erosion control due to construction activities. A “Permit-to-Install” would be required if significant changes or additions are made to sewer systems or water mains.

Public Notice:

Finding of No Significant Impact (FONSI):

The proposed action is to construct a new consolidated fire station and conduct the interior demolition of one building and the partial/complete demolition of four other buildings on the base. The No Action Alternative was analyzed where the current Fire Department activities would remain fragmented between two buildings and the new fire station would not be constructed. Based on my review of the facts and analysis contained in the EA, I conclude that Alternative A and B (the Proposed Action) will not have a significant impact either by itself or considering cumulative impacts. Accordingly, the requirements of the National Environmental Policy Act, the Council on Environmental Quality Regulation and 32 CFR 989 have been fulfilled, and an environmental impact statement is not required and will not be prepared.

RONALD J. LESTER, Director
Office of Environmental Management

DATE